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When Commerce Met Culture

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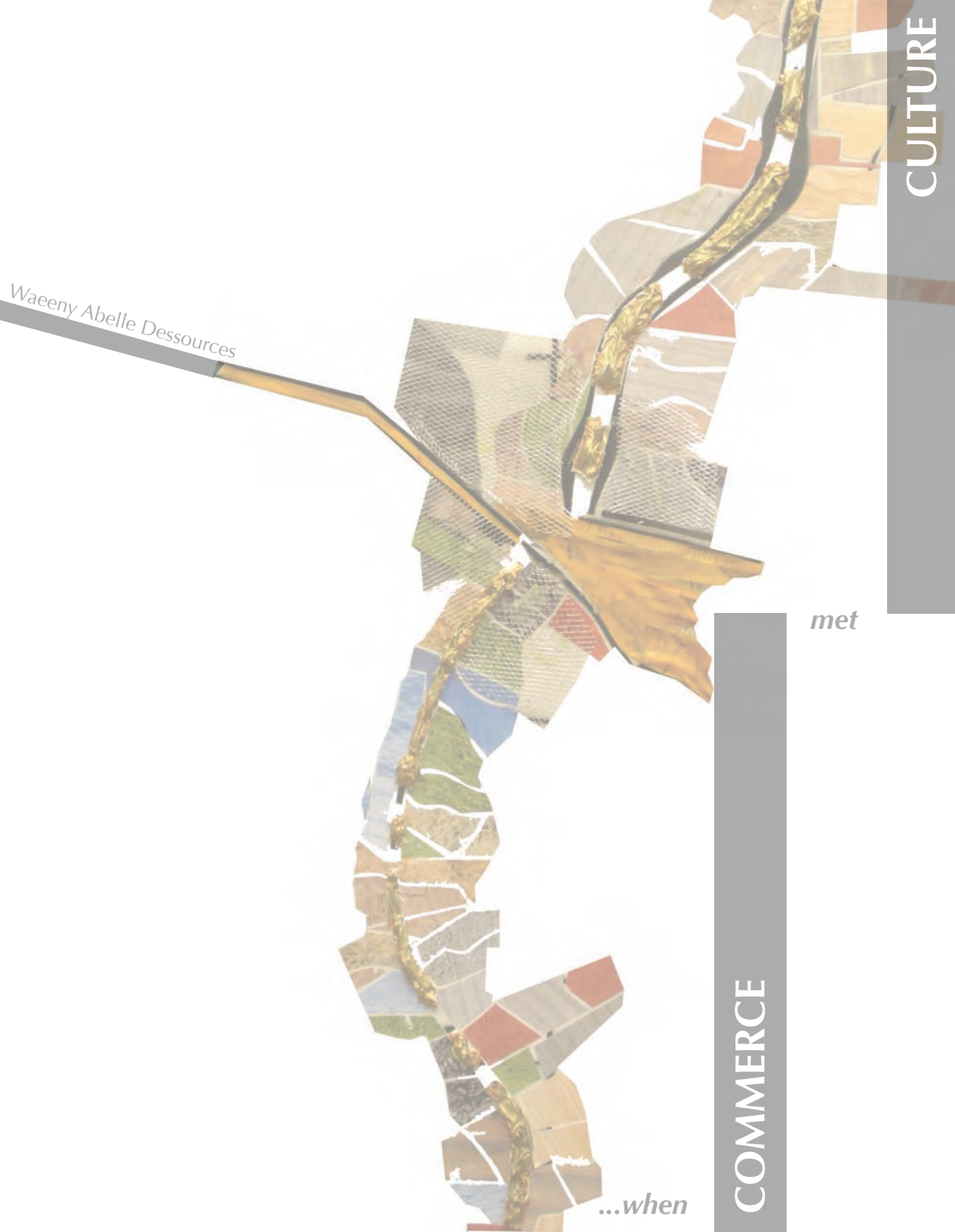


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CULTURE

met

Primary_ Francisco Sanin
Secondary_ Sekou Cooke

COMMERCE

...when

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A.

TAP-TAP: n. Bus, a type of jitney bus, pick-up bus, which originally went from central Port-au-Prince to Carrefour (suburb of Port au Prince). Each one is gay, carefree, and on-the-go. More important for philologists is that each one has a name, picturesque, indicative, and suggestive connotation. Each small truck has wooden benches adapted to them.

Adv. Fast, in a jiffy

B.

GOURDE: /goord/ n. The basic monetary unit of Haiti: equal to 100 centimes.

C.

CREOLE/ KREYOL: is a language spoken in Haiti by about twelve million people, which includes all Haitians in Haiti and via emigration, by about two to three million speakers residing in the Bahamas, Cuba, Canada, France, Cayman Islands, French Guiana, Martinique, Guadeloupe, Belize, Puerto Rico, Dominican Republic, Ivory Coast, Venezuela, and United States.

D.

MINUSTAH: United Nations Stabilisation Mission In Haiti (UNSTAMIH) (French: Mission des Nations Unies pour la stabilisation en Haïti), also known as MINUSTAH, an acronym of the French translation, is a United Nations peacekeeping mission in Haiti that has been in operation since 2004.

E.

MARCHÉ: “market” in the French language. A regular gathering of people for the purchase and sale of provisions, livestock, and other commodities

F.

BLAN: n. Haitian term for to describe an “outsider”. This directly translates to “white”; yet the term refers to anyone who is not a native of the country.

G.

IDP CAMP: An internally displaced person (IDP) is someone who is forced to flee his or her home but who remains within his or her country's borders. They are often referred to as refugees, although they do not fall within the current legal definition of a refugee. At the end of 2006 it was estimated there were 24.5 million IDPs in some 52 countries. The region with the largest IDP population is Africa with some 11.8 million in 21 countries.

H.

BIDONVILLES: In francophone countries, shanty towns are referred to as bidonvilles. These are particularly prevalent throughout the city of Port au Prince and the outskirts of the city

introduction

The commerce in Haiti is known to spill onto the streets and sidewalks. In such zones, vendors set up stands where they sell various items such as cigarettes, produce, and artwork. These markets have established themselves as important niches of consumer-merchant interaction; and consolidated hubs of commerce. The concept of the “Haitian Market” have proven to be the foundation for the distribution of goods and commodity throughout the city.

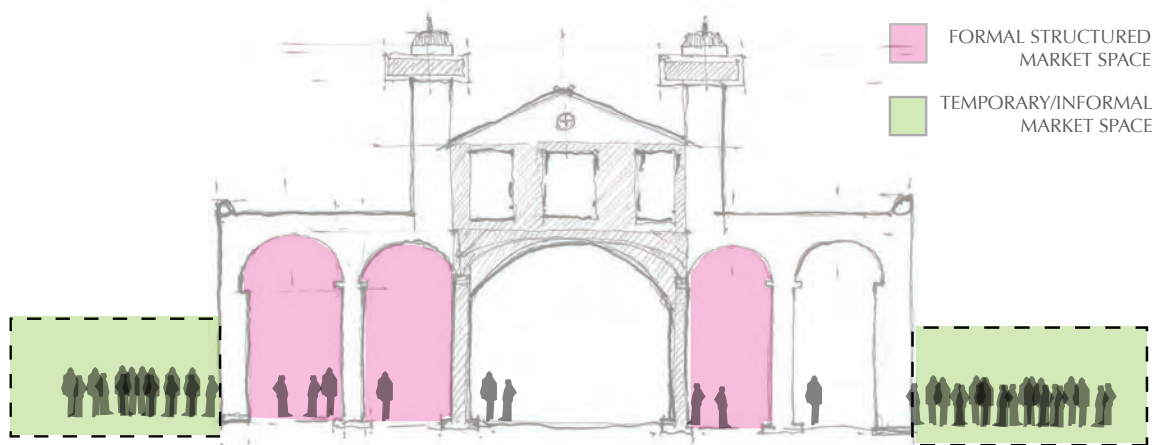
“The Haitian market epitomizes the self-employed merchant economy the nation.”

Traditional Haitian market buildings are generally covered open-air structures that provide a space to vend any imaginable product. The stalls within these buildings are rented to vendors on a daily, weekly, or monthly basis. Market management is then held responsible for maintaining these spaces as clean, providing necessary amenities, and in safe conditions.

Yet, a majority of these covered spaces are left vacant while commerce erupts beyond their walls. Numerous informal stands are piled against these formal market facades and therefore block both vehicular and pedestrian traffic in a zone that is already almost impossible to maneuver.

that is **ubiquitous** in the city of Port au Prince, and throughout

-Anonymous



Although the concept of a “marketplace” is one that most Haitians highly depend on; the market provides more than just a “shopping” experience for civilians of Port au Prince. Within the commercial district of the city; blocks east of the Harbor; established “market districts” are used for various programmatic functions throughout the day.

An idea of interchangeable space is then identified; one that embodies features of various program throughout the day.

...**market** by morning; **festival** by evening...

The overall concept of marketplace in Port au Prince entails a series of zones that already incorporate interchangeable programmatic functions. A majority of the informal and formal markets serve different programmatic purposes over the course of the year.

Because of the squalid conditions of these markets, such activity can no longer be celebrated as intended. The thesis proves that the architect can act as enabler in such a scenario; where an entirely new market type is erected. Such a market would establish interchangeable spaces that cater to the needs of the vendor, the tourist, and the consumer.

...**workshop** *by noon*; **ceremony** *by sunset*...

What is the *issue*?





Commerce and culture are tightly intertwined in the city fabric. Although sharing the same zone; these spaces do not potentialize the possibilities of a multi-use space; and therefore act exclusive of each other. It is of utmost importance that architecture enables the ability to create a sense of continuity in such a scenario.

The division between the interior and exterior of the market has proven to contribute to a series of problems for vendors, consumers, and the overall circulation on the site.

The residual space between the marketplace and the roads needs to be resolved. The market entrances need to be situated along primary urban connections such as tap-tap stops and bus pickup stations.

The formal layouts of the observed markets ignore even the most evident pathways that connect the community. By investigating and orienting and architectural intervention around the inherent pathways; people of the community will walk between the market and therefore cause the space to be more utilized while people are on their way to their destination.

A majority of the workers are females. Such a market needs to feature a space that is designated for children; leaving mothers the opportunity to work the hours they wish.

thesis contention



Long before the largest natural disaster in Haiti's history shook Port au Prince on January 12, 2010, the Caribbean country of approximately 10 million struggled to nourish and shelter its increasing population. Viewed by outsiders as a dead capital (Honman 23); the city of Port au Prince seems to lack the essential elements that once caused it to be such a highly dynamic region. In this sense, Port au Prince can be described as a city left in a state of chaos and disarray due to a series of events over the last century.

This thesis contends that an armature project can revitalize the city's existing wall condition and potentialize the present typology of the site by allowing [things] to occur. In doing this; the site disappears and acts as a catalyst: an architectural adhesive; stitching everything in [place].

49%

49% of Haitians are employed

Self-employed vendors and merchants account for 46% of Haiti's employed persons, and contribute to the second largest revenue source in the nation.

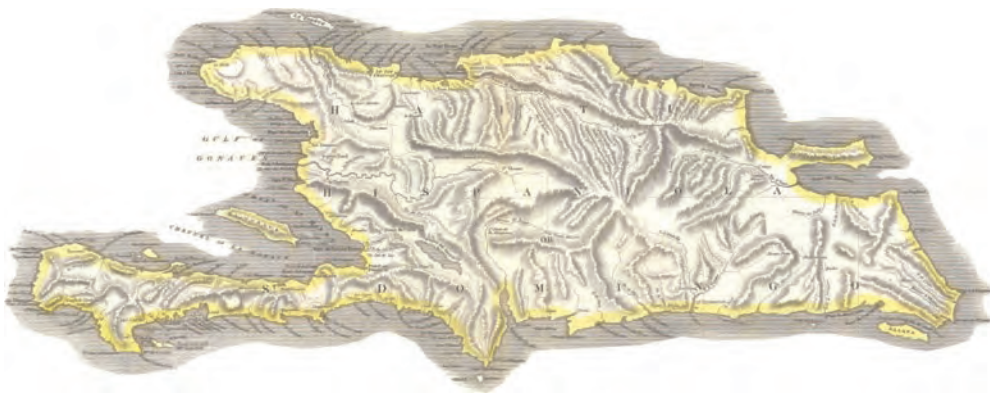
46%

The commercial district of Port au Prince; originating with a wall located a few blocks west of the Varreux Harbor is one zone that should be understood in layers; each exemplifying a cultural phenomenon that is vital in the overall essence of the city. Along boulevard La Saline lies a wall condition; one whose primary function is to protect the city from the dangers of an open seaport. Beside this wall exists an extensive hub of commerce and culture—two fundamental elements that define everyday Haitian life.

Identified within the site are two axes: a commercial axis, which denotes the width of the site, and a cultural axis that defines the length of the site--- both extending through the city and its periphery.

Such a portal site is already highly conducive to many cultural and commercial conditions that are not necessarily detectable with the naked eye. In addition, this region embodies a series of clues on what this place seeks to become.

history



1492

Christopher Columbus lands and names the entire island Hispaniola, or Little Spain

1697

Spain cedes the western part of Hispaniola to France, and this becomes Haiti, or Land of the Mountains



1804

Haiti becomes an independent nation, former slave Jean-Jacques Dessalines declares himself emperor

1915

The United States invades Haiti following black-mulatto friction, which it thought endangered its property and investments in the country

1956

Voodoo Physician Francois "Papa Doc" Duvalier seizes authority in military coup and is elected president one year later

1971

Duvalier dies and is succeeded by his 19-year old son, Jean Claude, or "Baby Doc"; who is self-declared president for life.



1990

Jean Bertrand Aristide is elected president in Haiti's first open and peaceful polls

1999

Preval declares that parliament's term has expired and begins ruling by decree following a series of disagreements with deputies

2004

January-February celebrations marking 200 years of independence turn into uprising against President Aristide, who is forced into exile. An interim government takes over

2007

January – The United Nations troops launch tough new offensive against armed gangs in Cite Soleil, which is one of the capital's largest and most violent shantytowns

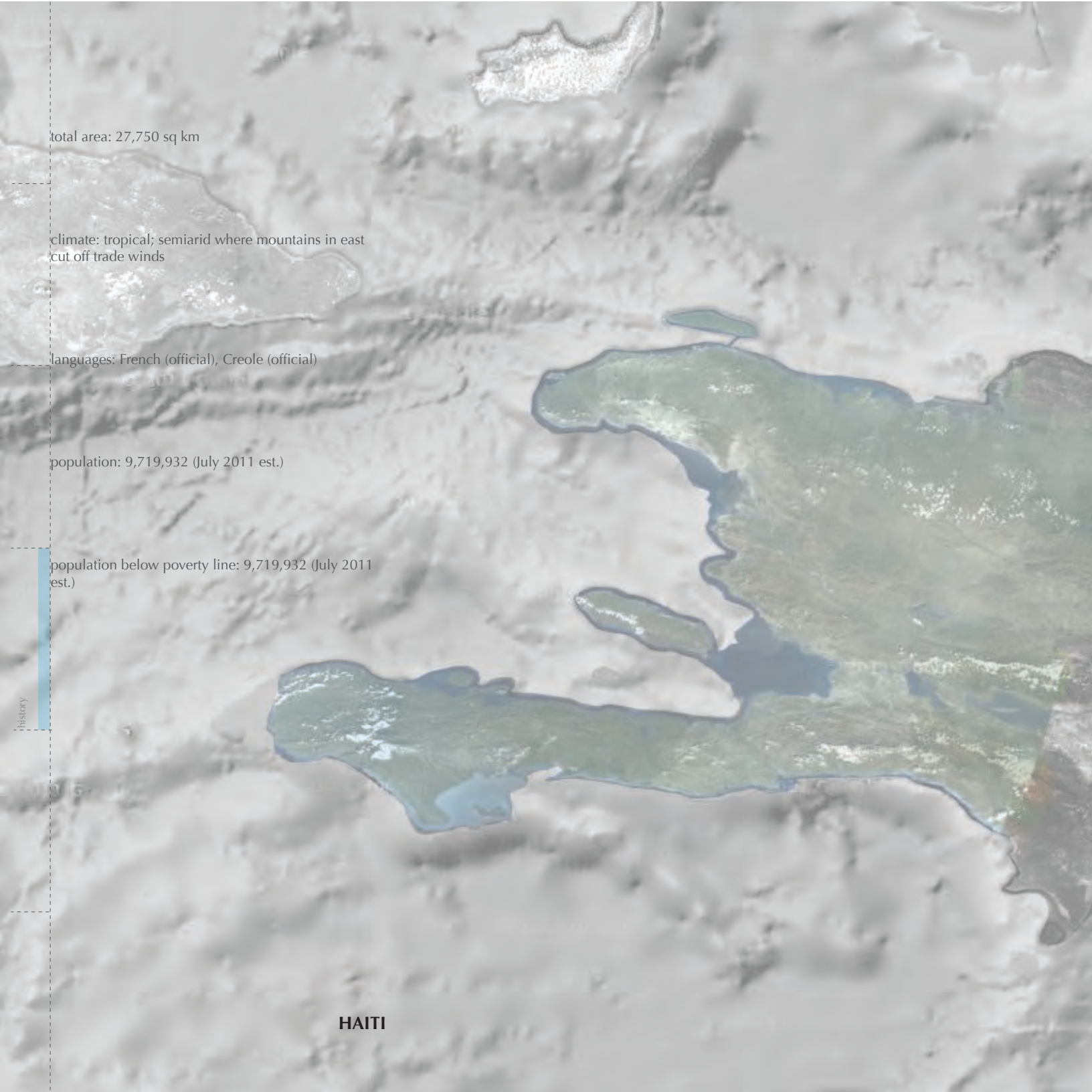
2010

January- up to 300,000 people are killed when a magnitude 7.0 earthquake hits the capital of Port au Prince and its wider region—the worst in Haiti in 200 years
The United States takes control of the main airport to guarantee orderly arrival of aid flights

2011

May- Mr. Michel Martelly takes office as the new president of the nation





total area: 27,750 sq km

climate: tropical; semiarid where mountains in east
cut off trade winds

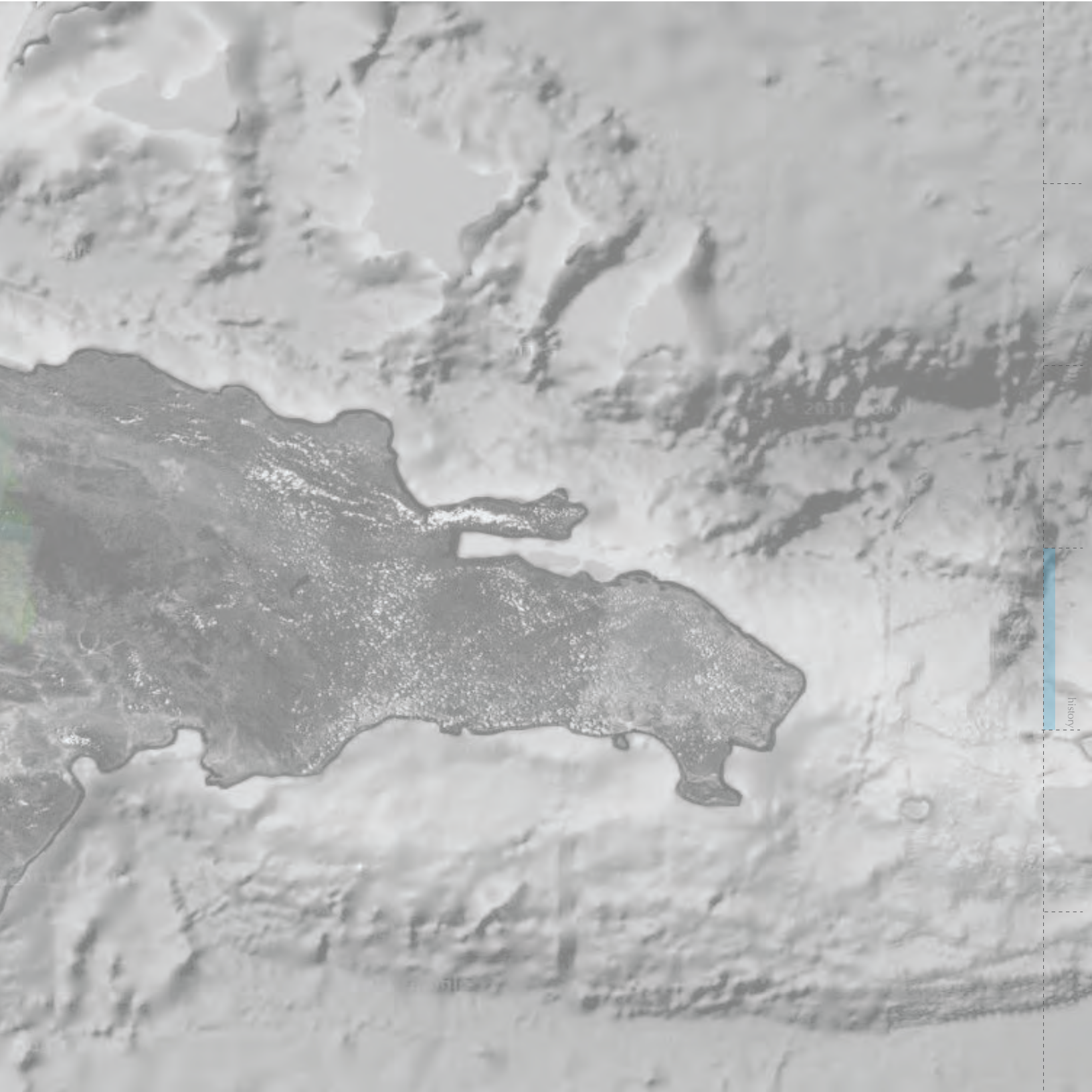
languages: French (official), Creole (official)


population: 9,719,932 (July 2011 est.)

population below poverty line: 9,719,932 (July 2011
est.)

history

HAITI



An aerial photograph of Port au Prince, Haiti. The city is situated on a coastal plain, with a large body of water (the bay) to the left. The city's layout is visible, showing a mix of urban development and surrounding hills. A dashed white circle highlights a specific area on the coast. The terrain is rugged and hilly, with some green vegetation visible. The overall scene shows a densely populated urban area with a complex topography.

Port au Prince is Haiti's financial center as it is an export hub. The most common exports departing Haiti through Port au Prince are coffee and sugar. Food processing is also highly common in Port au Prince.

The population of Port au Prince is relatively complicated to accurately determine because of a large presence of overcrowded slums in the hills adjacent to the city; those that have grown toward the city center over the years.

Even though Port au Prince is compactly populated, the city's layout is divided as commercial districts are near the water, while residential areas are in the hills next to the commercial areas; creating an amphi-theatre organization.

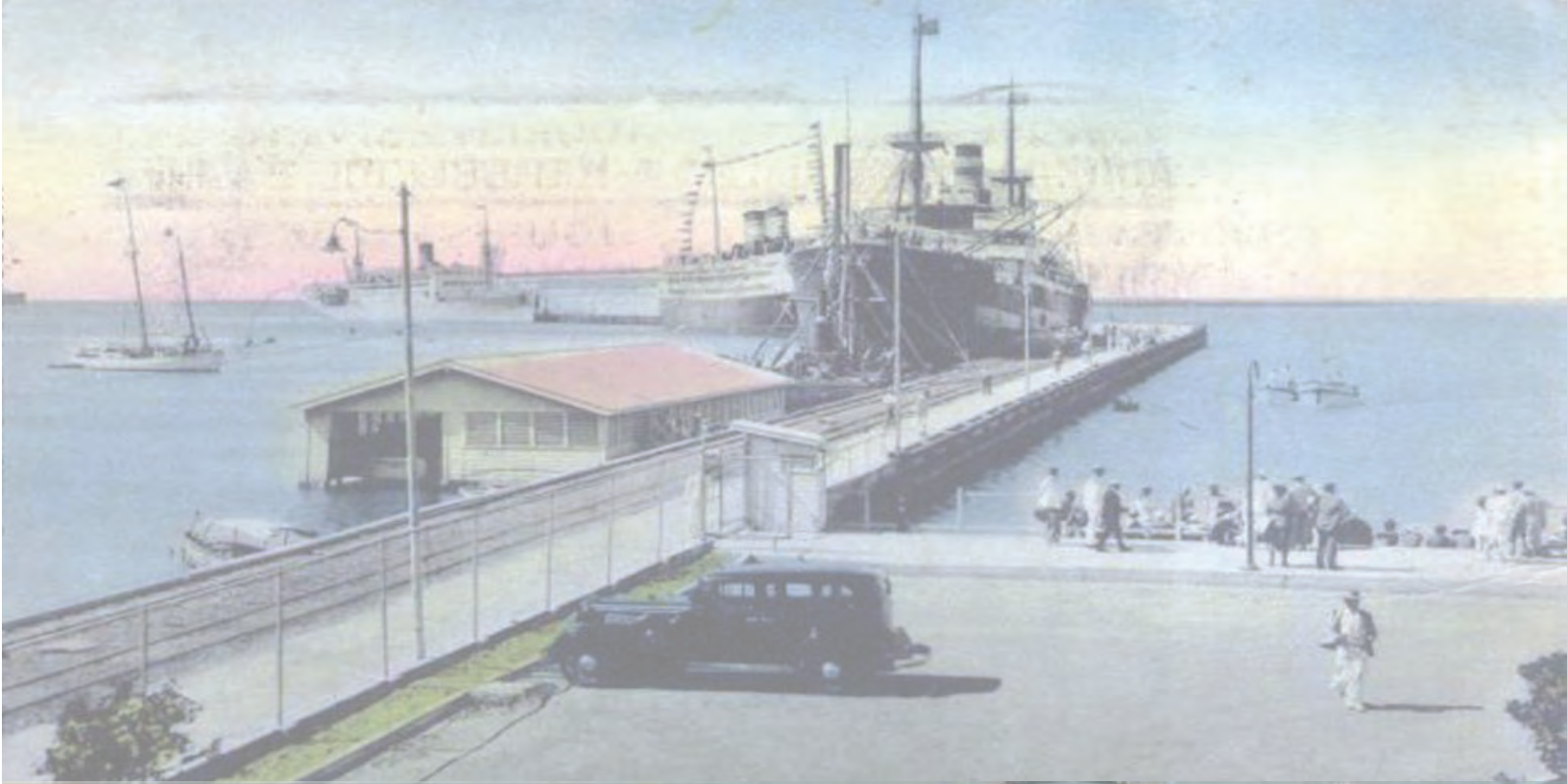




Varreux port is a private port with two large wharves for the importation of dry cargo in bulk loads. It is the only place for importation of hydrocarbons and asphalt, two substances that are also stored there in very large quantities with gasoline, diesel, kerosene, vegetable oil and ethanol.

The port can control up to 30,000-ton ships. The particular port is located approximately 2km north of APN port. As the center of distribution in the country, Port au Prince receives large loads of imported goods through this port. 74% of goods that are imported to the country are delivered through this port.



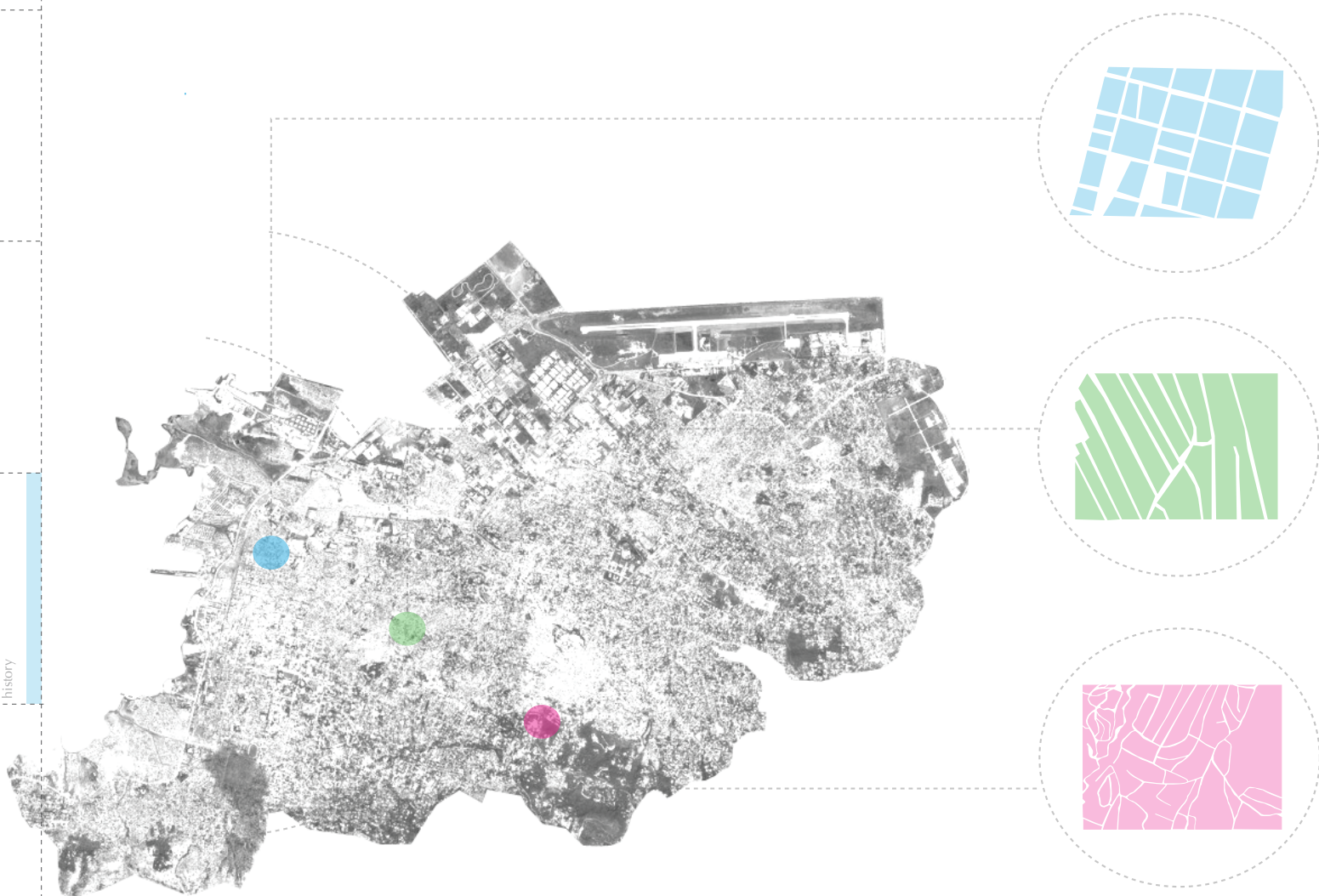


Number of berths: 7
 Two Ro-Ro berths: one 14 metres wide; the other 29 metres wide
 Total length of berths: 1,250 metres
 Depth of water alongside: 8 to 10 metres
 One gantry crane of 30 tonnes capacity
 One 33 tonne capacity forklift
 Six other forklifts with capacities between 3 and 7 tonnes
 Sixteen truck trailers
 Eight flatbeds for moving containers
 Fifteen chassis



PORT INTERNATIONAL DE PORT-AU-PRINCE









LOCAL MARKETPLACE

MERCHANTS ESTABLISH INFORMAL WOODEN STANDS THAT ARE COVERED BUT OPEN TO AIR ON ALL SIDES. AS CONSOLIDATED HUBS OF COMMERCE, MANY OF THESE MARKET BUILDINGS ARE KEYSTONES FOR THE DISTRIBUTION OF GOODS

RESIDENTIAL_PRIVATE PROGRAM

CONSISTS OF FORMAL HOUSING AND HAITIAN SHANTY-TOWNS; A SLUM SETTLEMENT OF IMPOVERISHED PEOPLE WHO LIVE IN IMPROVISED DWELLINGS MADE FROM A SERIES OF SCRAP MATERIALS

COMMERCIAL+INSTITUTIONAL_PUBLIC PROGRAM

INCLUDES OFFICE BUILDINGS, WAREHOUSES, RETAIL, CHURCHES, SCHOOLS, UNIVERSITIES, ETC.

MAJOR TRANSPORTATION HUB

FORMAL/ESTABLISHED BUS STATIONS AND GOVERNMENT PUBLIC TRANSPORTATION ROUTES

MINOR TRANSPORTATION HUB

THE HAITIAN 'TAP-TAP' : INFORMAL, YET RELIABLE METHOD OF PUBLIC TRANSPORT IN PORT-AU-PRINCE. ALTHOUGH THESE MINI-BUSES DO NOT HAVE A SET SCHEDULE, THEY ARRIVE AT DESIGNATED STOPS ON A FREQUENT BASIS

PRIMARY MERCHANT TRANSPORTATION ROUTE





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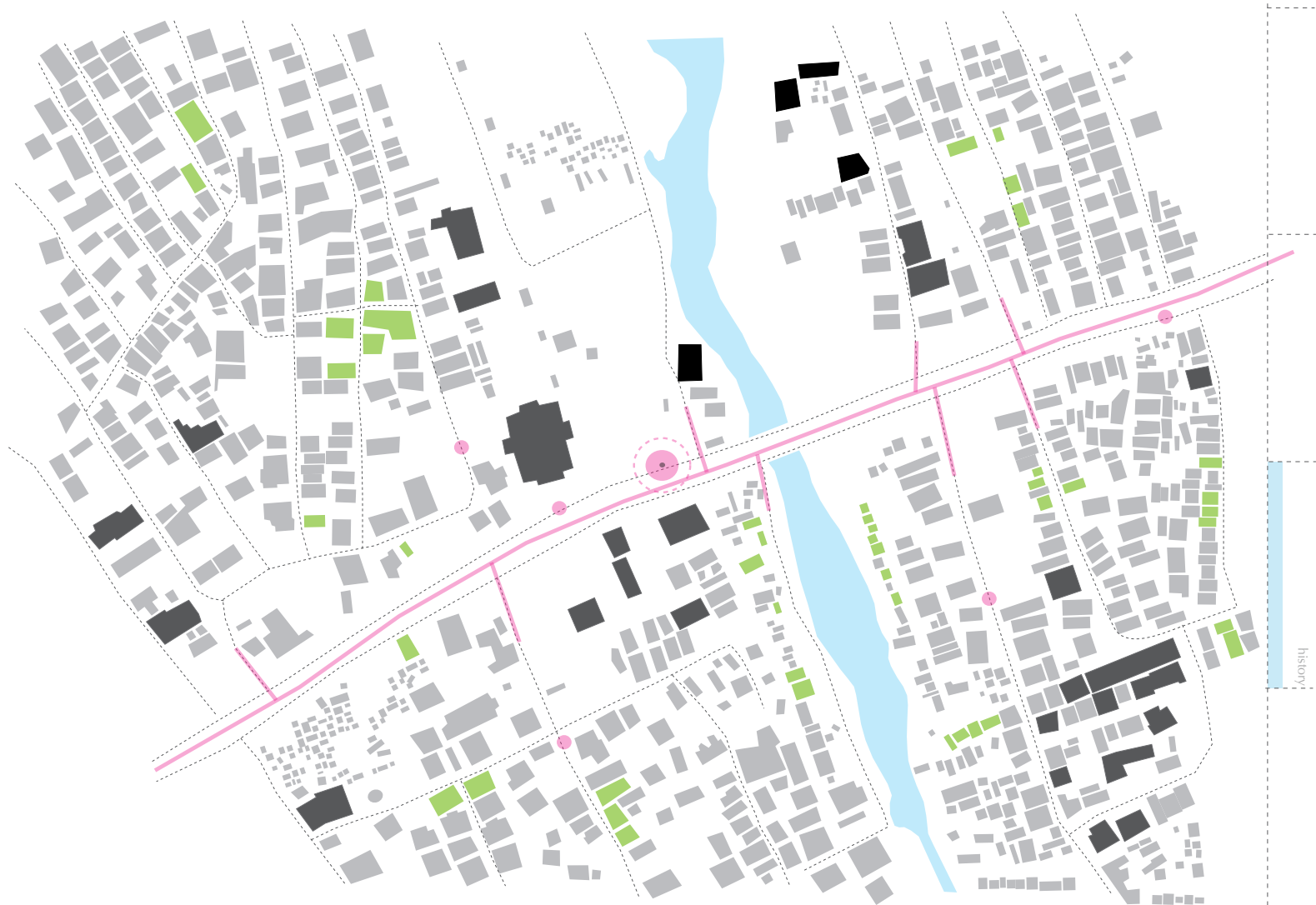
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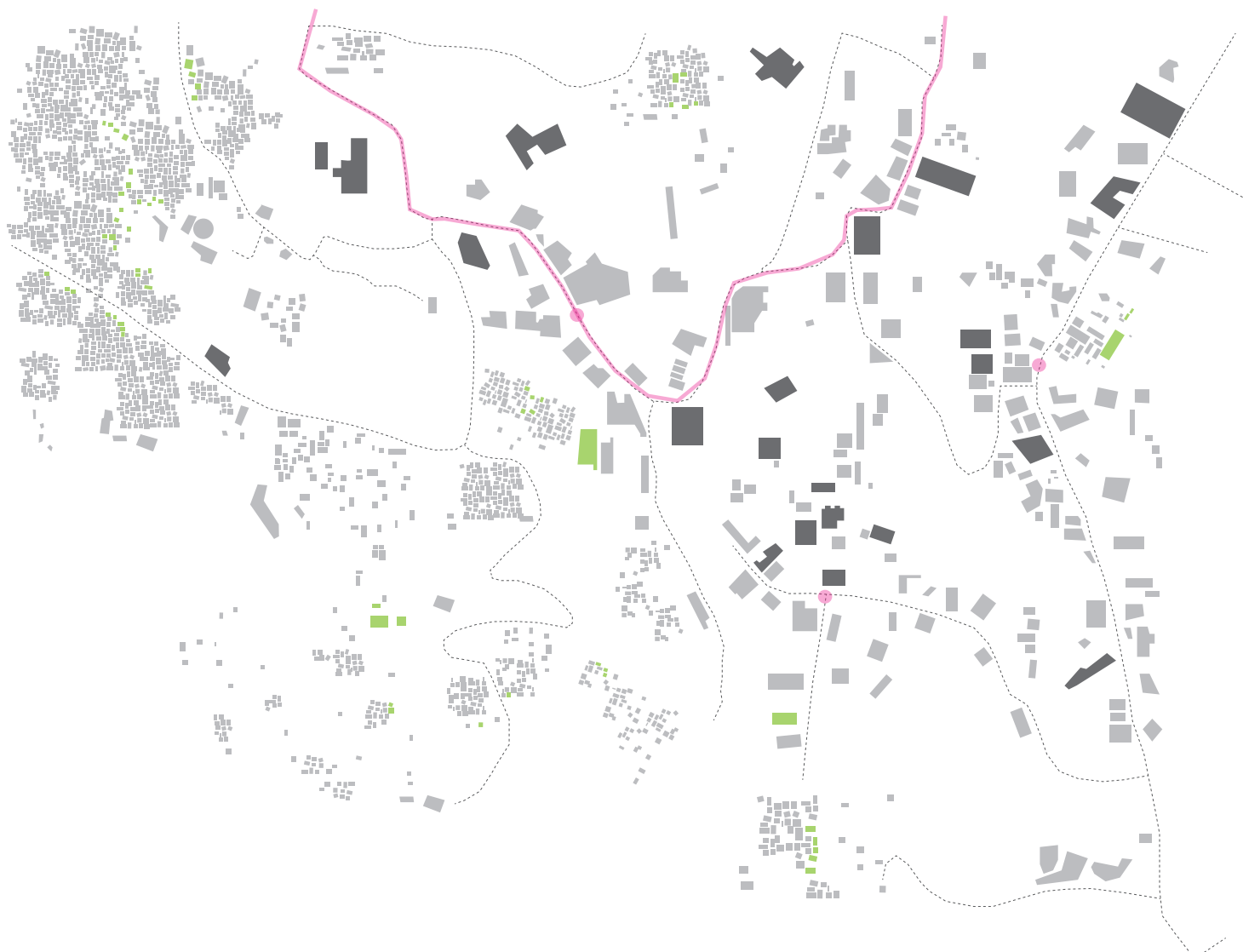


MINOR TRANSPORTATION HUB

THE HAITIAN "TAP-TAP" : INFORMAL, YET RELIABLE METHOD OF PUBLIC TRANSPORT IN PORT-AU-PRINCE. ALTHOUGH THESE MINI-BUSES DO NOT HAVE A SET SCHEDULE, THEY ARRIVE AT DESIGNATED STOPS ON A FREQUENT BASIS



PRIMARY MERCHANT TRANSPORTATION ROUTE



: Although the city of Port au Prince contains a rich informal market culture; some of its established marketplace structures have proven to define the city's character in a variety of ways. In such marketplaces, vendors are allotted rental of a stall for a given period of time. Here, they are only allowed to sell certain items, unlike the informal vendors. At times, many of these formal marketplaces are used for other purposes such as a performance space, festival center, or even rented out for events. Although erected with positive intentions, these markets have not been proven to be as successful as intended. Marketplace--- a zone known by Haitians to be a community, seeks revival, especially post-earthquake.

FORMAL MARKET





: in the city of Port au Prince and throughout the country; the trend of informal market vending exists. This is when a vendor arbitrarily stations her/himself along the sidewalk/ alleyway/ or alongside a building and sells merchandise of her/his choice. These vendors do not pay rent, rarely set up tables, and frequently block the passageway for both vehicular and pedestrian traffic. Being that they usually station themselves in front of established market zones, customers have a tendency of purchasing goods from these people other than those who sell at formal stands..

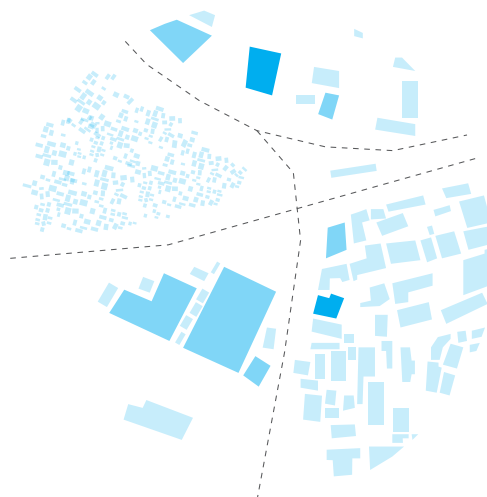
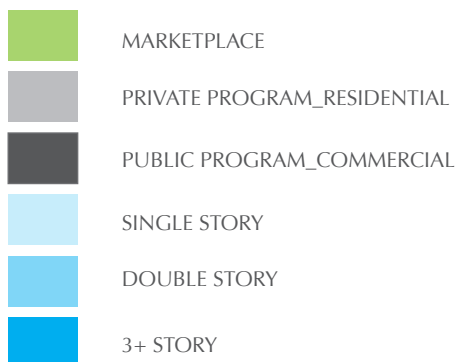


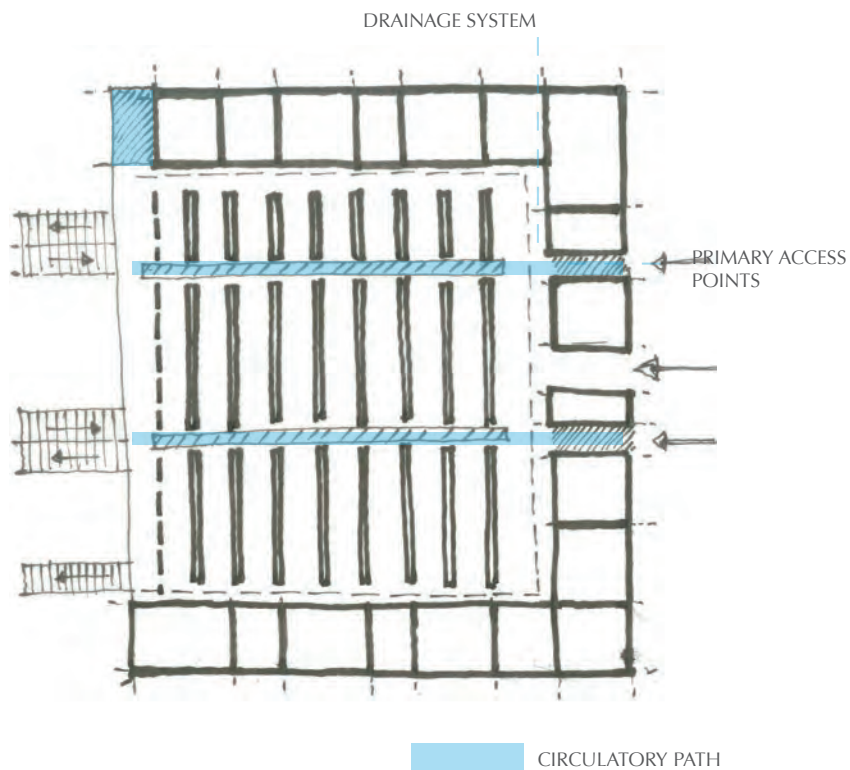
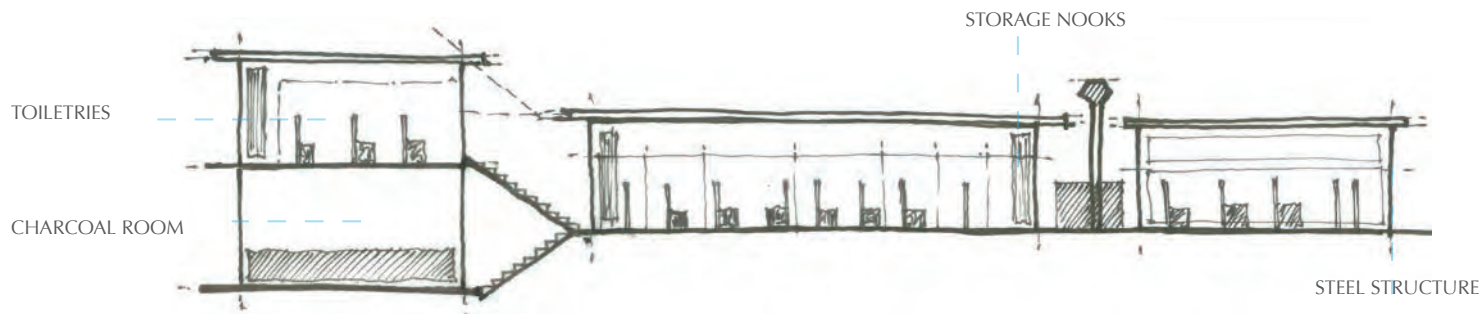
INFORMAL MARKET





- MARCHÉ DU CANAPÉ - VERT
- VENDOR RESIDENCE



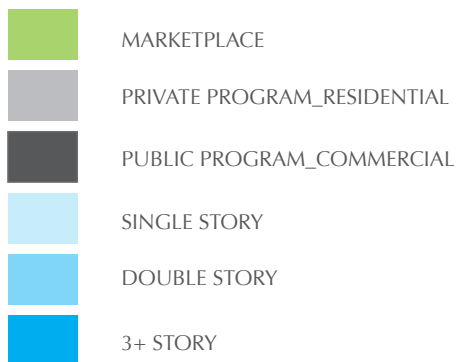


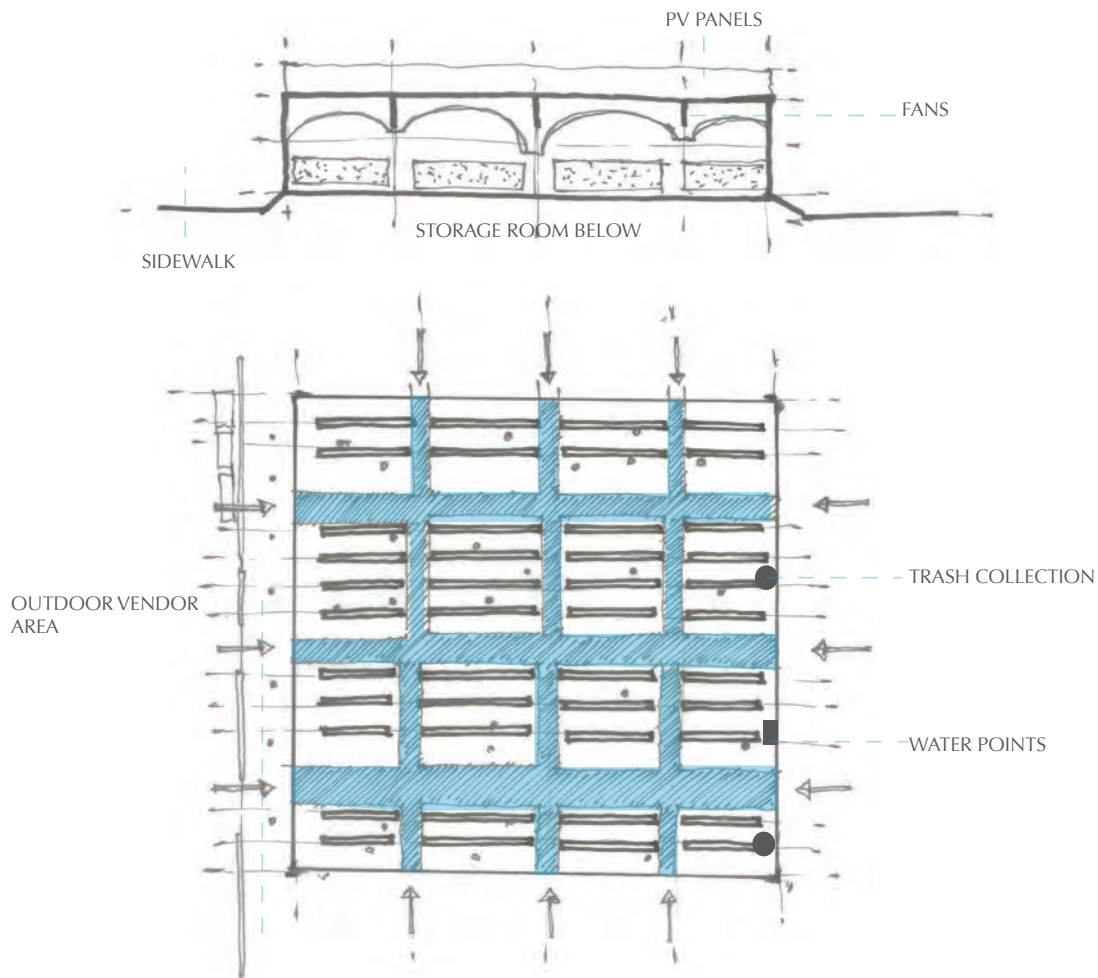


The Market of Canape Vert is located at the junction of Rue Bois Patate and Rue Larartinier. The structure is under a bulky “Unitranser” sign and nearly the entire facade is covered with images of the Digicel logo. The primary façade and service admission points are located on the northern end of Rue Bois Patate; an avenue that merges into a four lane/ one way road as it approaches and passes the market. Such traffic is heavy and therefore, does not allow for pedestrian movement. At this point; dumpsters and service vehicles meet, in addition to the main entryway into the market. Directly across Rue Bois Patate, there is an IDP camp (Internally displaced person). This camp is located in a zone that was a public square prior to the earthquake. On the southernmost edge of the camp, there is an unofficial tap-tap stand and a moto-taxi stand. There are no safe pedestrian access points between each of these transport hubs and the market. On the eastern perimeter of the market lies a two lane road with a series of one and two story commercial buildings that face the market. This road leads directly into a residential area; where numerous informal vendors and pedestrians roam the streets. Along this street lie two secondary pedestrian entrances into the market; where vehicular traffic is unbelievably overcrowded.



- MARCHÉ EN FER
- VENDOR RESIDENCE





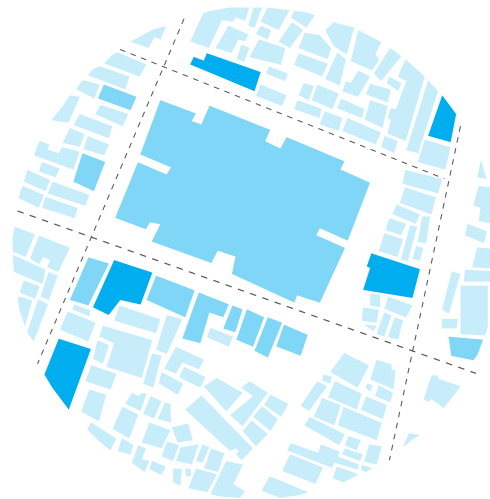
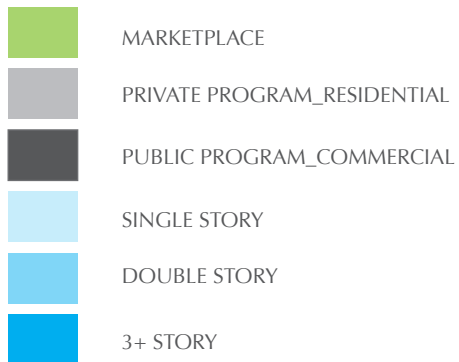
CIRCULATORY PATH

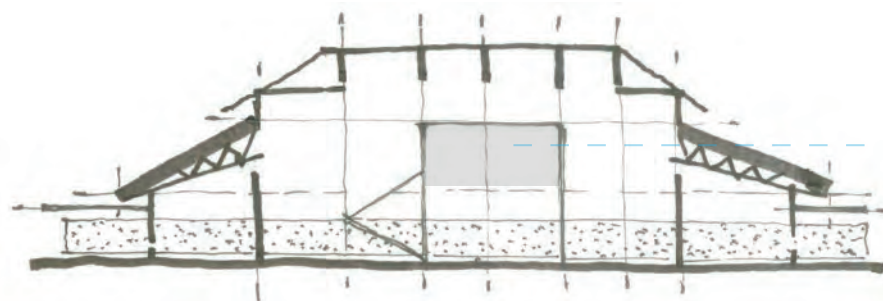


Central Port-au-Prince: The Marche de Fer is located on Boulevard Jean Jacques Dessalines between cross roads Rue des Frontis Fortis and Rue des Cesars. Along the West boundary of the market there appears to be a road elected for service and sanitation management. This road is rather free of vendors and accordingly, pedestrian traffic.

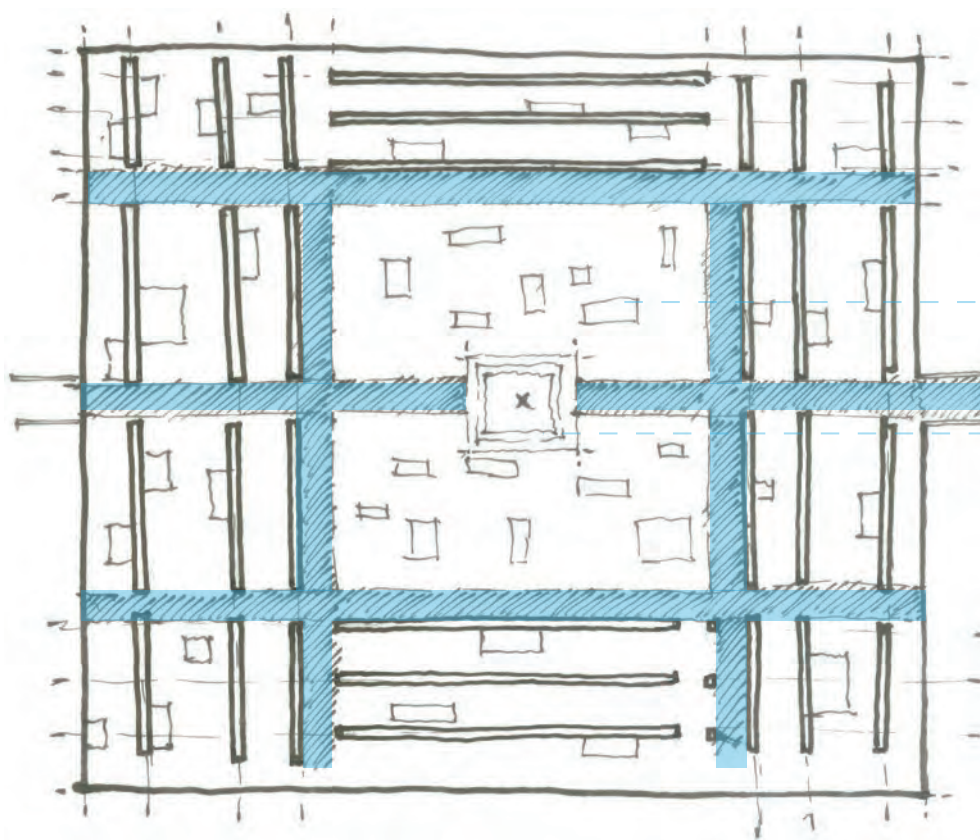


■ MARCHÉ SALOMON
● VENDOR RESIDENCE





DIRECTOR'S OFFICE



VENDING TABLES

BROKEN WATER PUMP

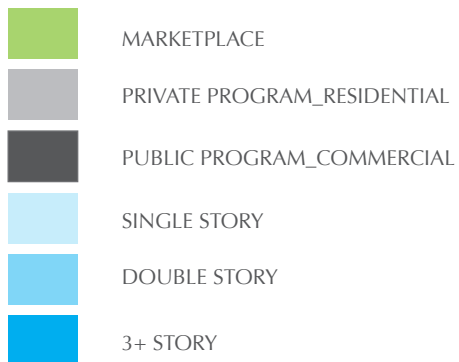
CIRCULATORY PATH

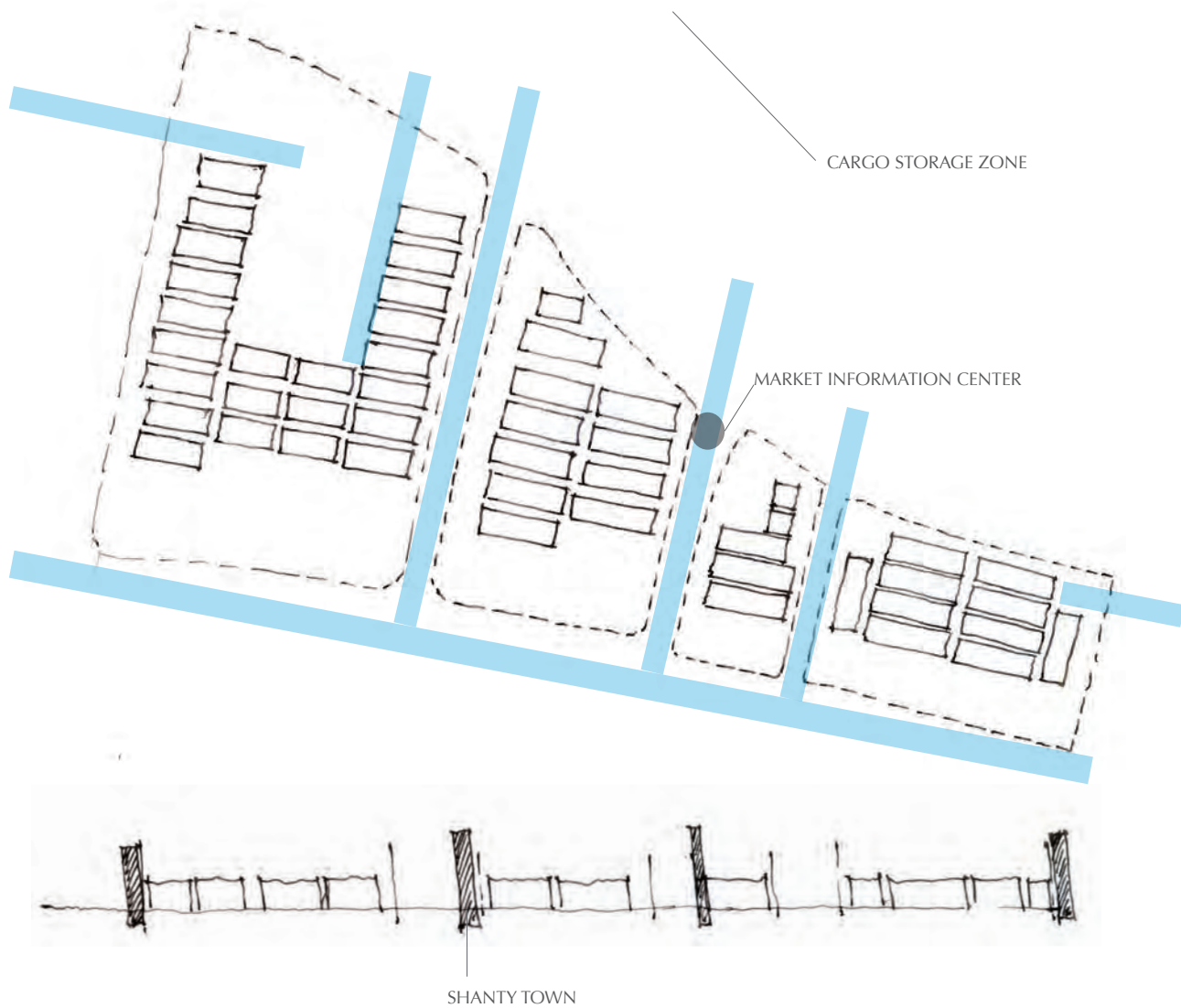


The Salomon market is located in central Port-au-Prince. The market is located in the large square located at the intersection of Rue Docteur Dehoux and Rue Fequieres. Rue Docteur Dehoux, organized along the Eastern edge of the market, is the only paved road offering vehicular admittance. This is also where the tap tap hub is positioned. Rue Fequieres, located on the South edge is also paved but in a very bad condition, therefore, becoming a pedestrian street taken over by informal vendors. At the intersection of Rue Docteur Dehoux and Rue Fequieres there is a police station and a moto taxi stand. The other two sides of the market are lined by pedestrian dirt roads congested with informal vendors. Facing the Market are mostly single and double story commercial buildings where the products being sold seem to be building supplies, household items and food items. The adjacency of the police station provides a gist of added security at the marketplace.



- MARCHÉ SOLIDARITÉ
- VENDOR RESIDENCE







The Solidarite Market is the largest market in central Port-au-Prince expanding across approximately three and a half blocks as well as the nearby streets. The boundaries of the market are overcrowded with informal vendors setting up their products in close proximity to sanitation points and standing water intended for the market. The main service and vehicular access is along Boulevard Saline; a crucial transportation lode in and out of the city as well as an admittance road for the port. On some of the adjacent roads, vendors and vehicular traffic split the same space. Vendors place their goods on squares of fabric in such a fashion so that the car axles pass directly over their displays. All the vendor needs to do is physically jump out of the way when a car passes by, at times resulting in minor accidents.





- FEMALE VENDOR
- MALE VENDOR



MARKET NAME

THE MARKET

BACKGROUND INFORMATION

The formal market is housed in over forty shade structures. However, the lines between the exterior and the interior of the market are not noticeable and there are neither edge walls nor gates. The informal chaos of the exterior vending appears to take over any organizing structure laid out by the grid of the shade structures. The filth and repulsive odor of the market immediately brings into question whether there is any sanitation management present.

The Solidarite Market is the largest market in central Port-au-Prince expanding across approximately three and a half blocks as well as the nearby streets. The boundaries of the market are overcrowded with informal vendors setting up their products in close proximity to sanitation points and standing water intended for the market. The main service and vehicular access is along Boulevard Saline; a crucial transportation lode in and out of the city as well as an admittance road for the port. On some of the adjacent roads, vendors and vehicular traffic split the same space. Vendors place their goods on squares of fabric in such a fashion so that the car axles pass directly over their displays. All the vendor needs to do is physically jump out of the way when a car passes by, at times resulting in minor accidents.

The entire market is beneath sizeable metal shade structures and protected by a one story concrete wall down the boundary. Behind this partition are restaurants that access both the exterior and interior of the market.

The Market of Canape Vert is located at the junction of Rue Bois Patate and Rue Larartinier. The structure is under a bulky "Unitranser" sign and nearly the entire facade is covered with images of the Digicel logo. The primary façade and service admission points are located on the northern end of Rue Bois Patate; an avenue that merges into a four lane/ one way road as it approaches and passes the market. Such traffic is heavy and therefore, does not allow for pedestrian movement. At this point; dumpsters and service vehicles meet, in addition to the main entryway into the market. Directly across Rue Bois Patate, there is an IDP camp (Internally displaced person). This camp is located in a zone that was a public square prior to the earthquake. On the southernmost edge of the camp, there is an unofficial tap-tap stand and a moto-taxi stand. There are no safe pedestrian access points between each of these transport hubs and the market. On the eastern perimeter of the market lies a two lane road with a series of one and two story commercial buildings that face the market. This road leads directly into a residential area; where numerous informal vendors and pedestrians roam the streets. Along this street lie two secondary pedestrian entrances into the market; where vehicular traffic is unbelievably overcrowded.

The market has recently reopened after incomplete reconstruction and restoration due to destruction caused by the 2010 earthquake. The market is structured in two main open-air covered halls with a connecting plaza in between. The South Hall has low concrete stalls where produce and dry goods are sold. The Northern hall sells arts and crafts. The stalls here are deeper with metal grid work partitions attached to the low concrete partitions for display use. There are no meat markets or restaurants on site.

Central Port-au-Prince: The Marche de Fer is located on Boulevard Jean Jacques Dessalines between cross roads Rue des Frontis Fortis and Rue des Césars. Along the West boundary of the market there appears to be a road elected for service and sanitation management. This road is rather free of vendors and accordingly, pedestrian traffic.

The actual formal covered market space is flanked by semi-permanent vending structures located against the exterior of the market's perimeter fence. Only one formal entrance to the market remains accessible as the original design entailed. Most of the access points have become indirect paths in and out of the intruding vendors.

The Salomon market is located in central Port-au-Prince: The market is located in the large square located at the intersection of Rue Docteur Dehoux and Rue Fequieres. Rue Docteur Dehoux, organized along the Eastern edge of the market, is the only paved road offering vehicular admittance. This is also where the tap tap hub is positioned. Rue Fequieres, located on the South edge is also paved but in a very bad condition, therefore, becoming a pedestrian street taken over by informal vendors. At the intersection of Rue Docteur Dehoux and Rue Fequieres there is a police station and a moto taxi stand. The other two sides of the market are lined by pedestrian dirt roads congested with informal vendors. Facing the Market are mostly single and double story commercial buildings where the products being sold seem to be building supplies, household items and food items. The adjacency of the police station provides a gist of added security at the marketplace.

MARCHÉ
SOLIDARITÉ

MARCHÉ DU
CANAPÉ-VERT

MARCHÉ EN FER

MARCHÉ
SALOMON

DISTRIBUTION STALLS

Some of the “official” stalls had concrete counters and separation walls. However, there were many stalls formed out of makeshift wood structures, which only served as temporary structures.

Concrete counters and concrete dividing walls with storage space beneath. Many vendors add approximately 60% more display space vertically above the concrete plinth and on wooden tables

Aisle vending stalls have concrete counters with end and back walls to which secure storage cabinets can be attached.

Concrete counters and concrete dividing walls with storage space below.

MERCHANDISE SOLD

Perishable foods, meat, dry foods

Most of the packaged products are coming from the Dominican Republic. Fresh produce is Haitian

arts and crafts, fruit and vegetables, dry produce

Most of the packaged products come from the Dominican Republic and part of north Panama. Fresh produce is Haitian.

UTILITIES

Unknown

There was access to electricity and water. Very few light bulbs are set within the metal roof and inside the secure perimeter wall stores

Lighting fixtures, water, janitorial sinks, phone charging stations

Many fridges/freezers are evident but none are used for meat. Two transformers supply EDH (voltage) to the market. An old water end with four taps is located at the center of the market but no longer functions.

RENT

Unknown

350 Haitian gourdes per week

100 gourdes/week in the food pavilion and 150 gourdes/week in the tourist pavilion.

50 Gourdes /day. The cost rises on Saturdays, which is the main market day in the city.

MARKET NAME

PUBLIC AMENITIES

SANITATION

DRAINAGE

SURFACE MATERIALITY

MARCHÉ SOLIDARITÉ

Unknown

Sanitation appears to be a chief issue at the market with several large dumping sites littered throughout various points in the market. These sites appear to be end points for the garbage; which is then burned on site.

The market is very flat and unclear and a drainage system was not visible. There are only three road gutters throughout the marketplace; all of which are filled with still bloody water. Beside the main road of the market were several pools of what appeared to be standing sewage. This area was filled with insects and visible mold.

Concrete, dirt

MARCHÉ DU CANAPÉ-VERT

Restaurants

Toilets are broken; Staging area and bins for trash were provided

There was the absence of any pooling water on the floor of the market and evident roof drains in good condition. The lack of meat produce lessens the overall need for cleaning

Concrete flooring and countertops

MARCHÉ EN FER

Unknown

There are public toilets costing 10 gourdes/use in a structure independent of the market. Although the intention was to integrate toilets in the central plaza, it was never built. Trash bins were located sporadically and there is a designated service area for trash in the rear end of the market.

The floors of the market are sloped in four directions towards the exterior of the market; this allows for instant draining

Concrete, and paving stone

MARCHÉ SALOMON

There is a fountain at the center of the market, which is currently broken

There are absolutely no toilettes at the market. It is the priority of the director to include toilettes

There were wet areas on the floor of the main market space and the perimeter roads had pools of sitting water. According to the stallholders, surface water runs through the market during heavy rain, causing excess moisture throughout the interior.

Concrete floors and countertops

STORAGE

Merchants are forced to take all their merchandise home with them on a daily basis. There are no boundary gates or storage rooms on site.

Tangential concrete vending stalls can be fully enclosed with doors and locks. Aisle vending stalls have concrete counters with end and back walls to which secure storage cabinets can be attached.

Unknown

Aisle vending stalls have concrete counters with back walls to which secure that the storage cabinets can easily be attached. Much of the produce and equipment is stored on top of the stalls and simply tied beneath sheeting

PROXIMITY TO PUBLIC TRANSPORTATION

.28KM

.70 KM

.15 KM

.42 KM

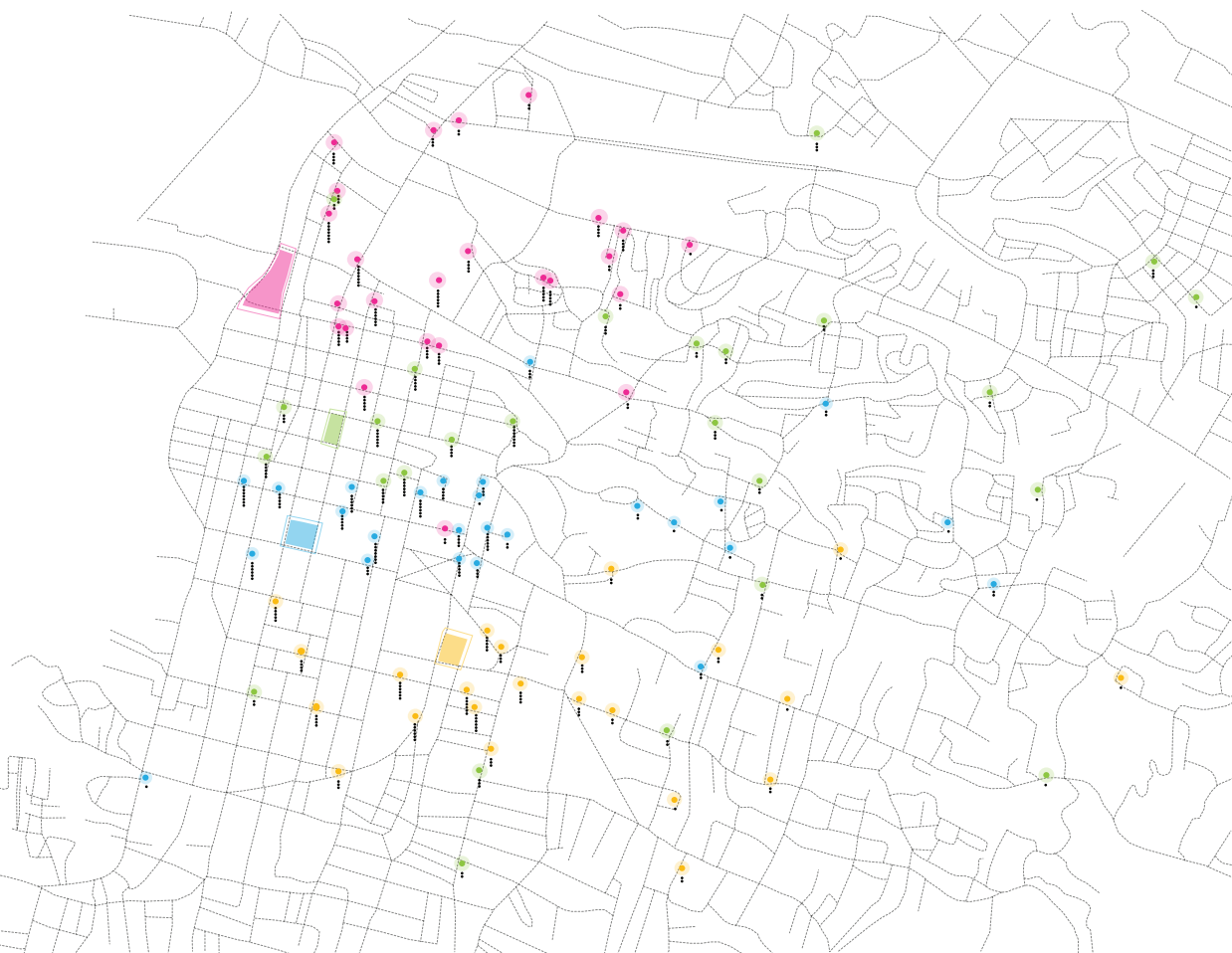
MARKET EVALUATION

Such a market lacks the necessities for a sanitary and safe community marketplace. None of the services that are required to maintain a market of this dimension were apparent. Such a situation is highly dangerous being that these vendors essentially sell produce and various meats in open sewage.

The Market's location on the convergence of a busy intersection provides easy access for service vehicles and sanitation services. Additionally, the direct adjacency of a tap tap stand and a moto-taxi stand is an added benefit, though their pedestrian accessibility is dubious. However, the scale of the main road, Rue Bois Patate and the lack of dedicated pedestrian space does not seem to attract pedestrian activities. Entrances to the market are unmarked and unembellished. There is no visible signage announcing the market

Of all the markets in Port au Prince, this seems to be the most organized and inviting to both civilians and pedestrians. On the downside, this market does not exemplify excellence in regard to what an economically sustainable Haitian market should be. Because of this, market management only allows for the vending of nonperishable food items and crafts; those that would not require high maintenance. There is also an unusually high security force surrounding the market. These two factors appear to be cost-effectively self-sustaining.

Being that the area lacks quality roadways with proper drainage, sanitation and service access; a series negative issues for the vendors emerge throughout the market. The interior of the market is often left vacant due to a lack of funds for maintenance; consequently, it seems to be worthless to actually be inside the market. In addition, the fees for the vendor's rent space seem to be unaffordable; therefore, many vendors set up their stands on the streets—which is where most of the commerce seems to be taking place.



- MARCHÉ SOLIDARITÉ
- MARCHÉ DU CANAPÉ - VERT
- MARCHÉ EN FER
- MARCHÉ SALOMON
- ● ● ● — VENDOR RESIDENCE
- | # OF DAYS/WEEK AT MARKET VARIES_1-7

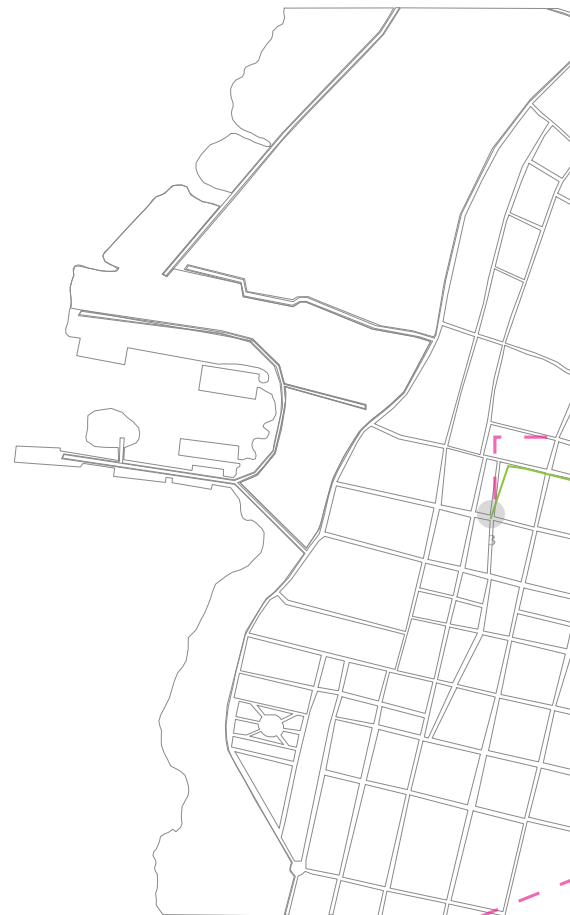
Although these established market zones are located within close proximity to each other; they all seem to attract vendors from different sectors of the city.

In some cases, the more successful markets attract consumers from all over the city. Meanwhile, markets with a limited supply of merchandise only attract vendors who reside nearby.

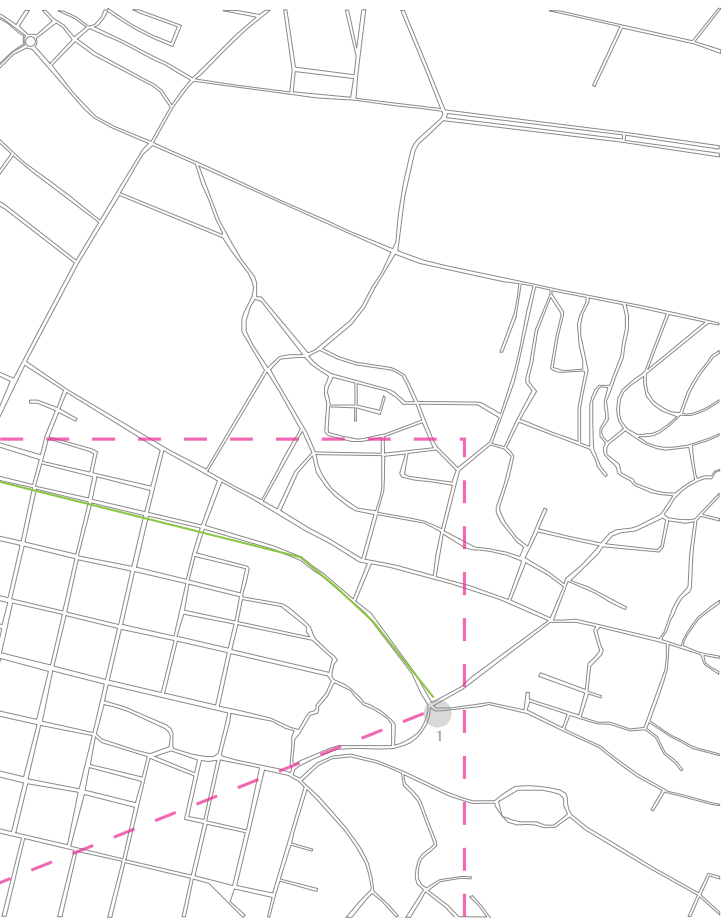
MARKET: (N) any one of a variety of systems, institutions, social relations and infrastructures whereby parties engage in exchange. While parties may exchange goods and services by negotiation, most markets rely on sellers offering their goods or services (including labor) in exchange for money from buyers. It can be said that a market is the process in which the prices of goods and services are established.







1



2

PRODUCT IS REANSORTED FROM THE FARM TO THE MARKETPLACE



3



4

PRODUCT IS THEN DISTRIBUTED TO THE CONSUMER



1

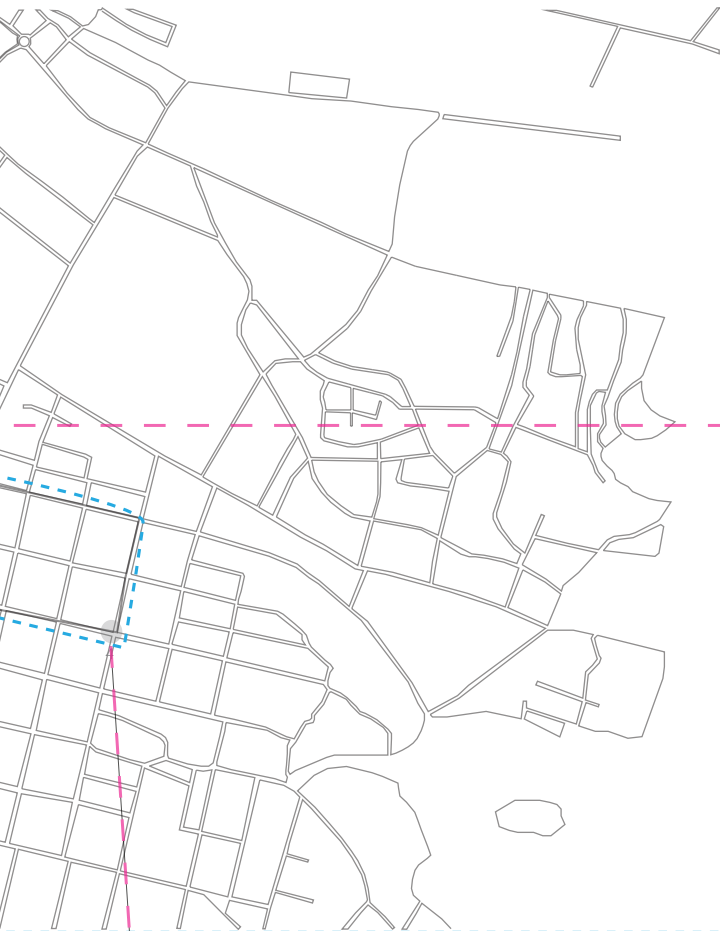
CARGO SHIP TRANSPORTS
GOODS FROM OTHER
NATIONS

2

GOODS ARE DELIVERED TO
THE PORT AU PRINCE
SEAPORT

3

CARGO TRUCK TRANSFERS GOODS
TO STORAGE FACILITY/
DISTRIBUTION CENTER



4

VENDOR PURCHASES GOODS
WHOLESALE



5



6



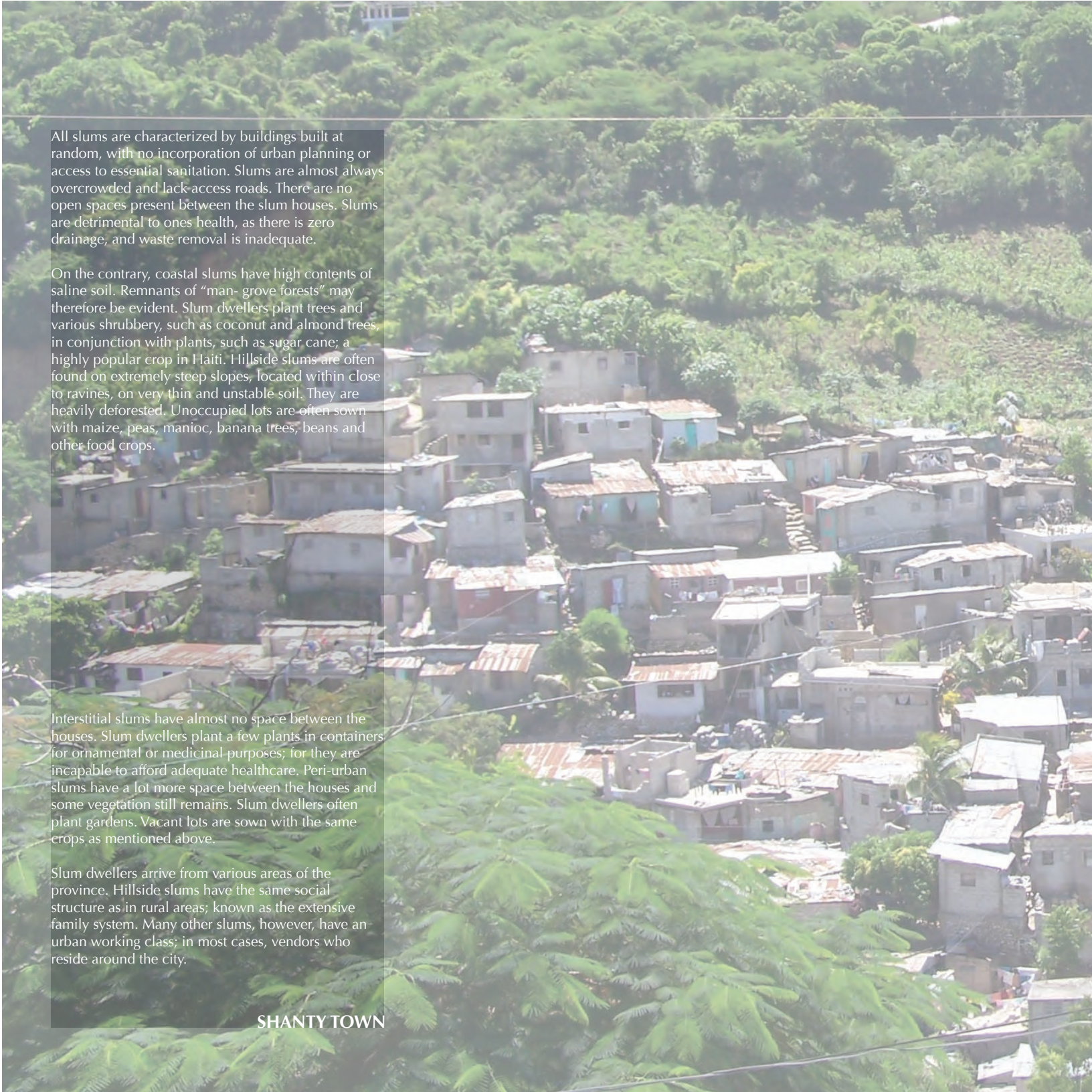
7

VENDOR TRANSPORTS GOODS
TO INDIVIDUAL MARKET STALLS



8

GOODS ARE PURCHASED BY
CUSTOMERS

An aerial photograph of a hillside slum in Haiti. The houses are built on a steep slope, with many having corrugated metal roofs. The surrounding area is covered in dense green vegetation. The houses are closely packed together, with some having multiple stories. The overall scene depicts a typical hillside slum environment.

All slums are characterized by buildings built at random, with no incorporation of urban planning or access to essential sanitation. Slums are almost always overcrowded and lack access roads. There are no open spaces present between the slum houses. Slums are detrimental to one's health, as there is zero drainage, and waste removal is inadequate.

On the contrary, coastal slums have high contents of saline soil. Remnants of "man- grove forests" may therefore be evident. Slum dwellers plant trees and various shrubbery, such as coconut and almond trees, in conjunction with plants, such as sugar cane; a highly popular crop in Haiti. Hillside slums are often found on extremely steep slopes, located within close to ravines, on very thin and unstable soil. They are heavily deforested. Unoccupied lots are often sown with maize, peas, manioc, banana trees, beans and other food crops.

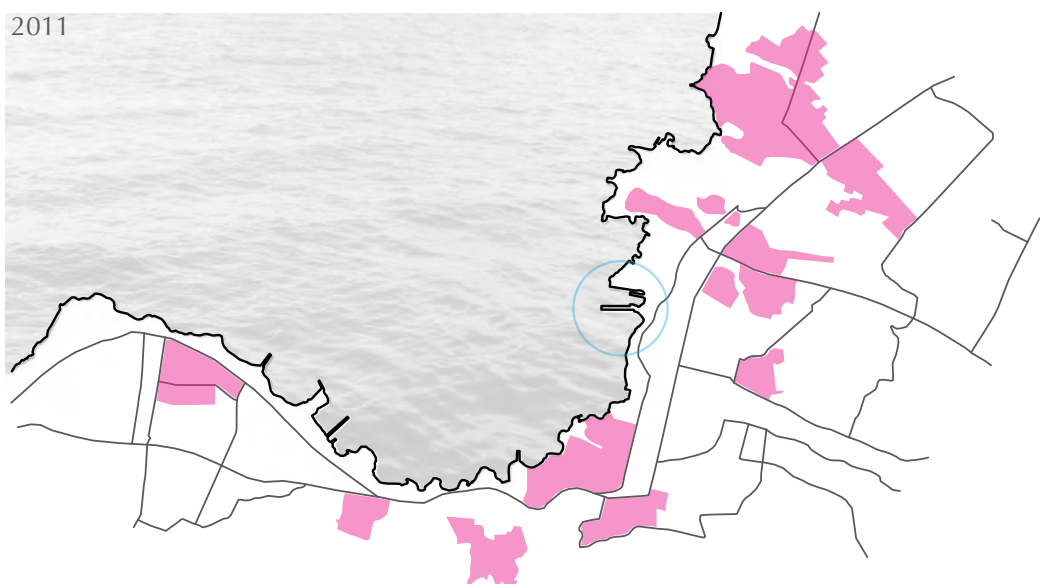
Interstitial slums have almost no space between the houses. Slum dwellers plant a few plants in containers for ornamental or medicinal purposes; for they are incapable to afford adequate healthcare. Peri-urban slums have a lot more space between the houses and some vegetation still remains. Slum dwellers often plant gardens. Vacant lots are sown with the same crops as mentioned above.

Slum dwellers arrive from various areas of the province. Hillside slums have the same social structure as in rural areas; known as the extensive family system. Many other slums, however, have an urban working class; in most cases, vendors who reside around the city.

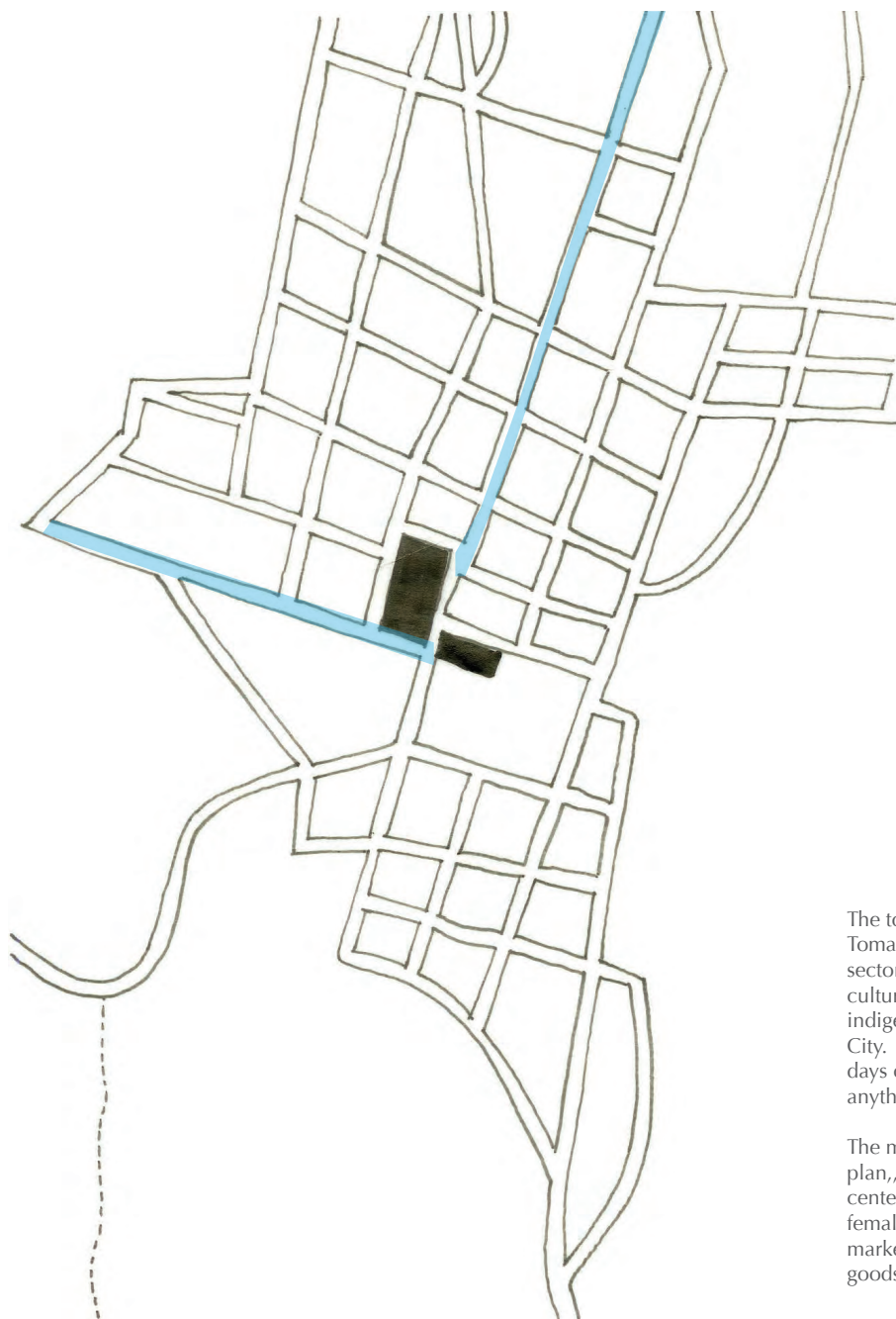
SHANTYTOWN







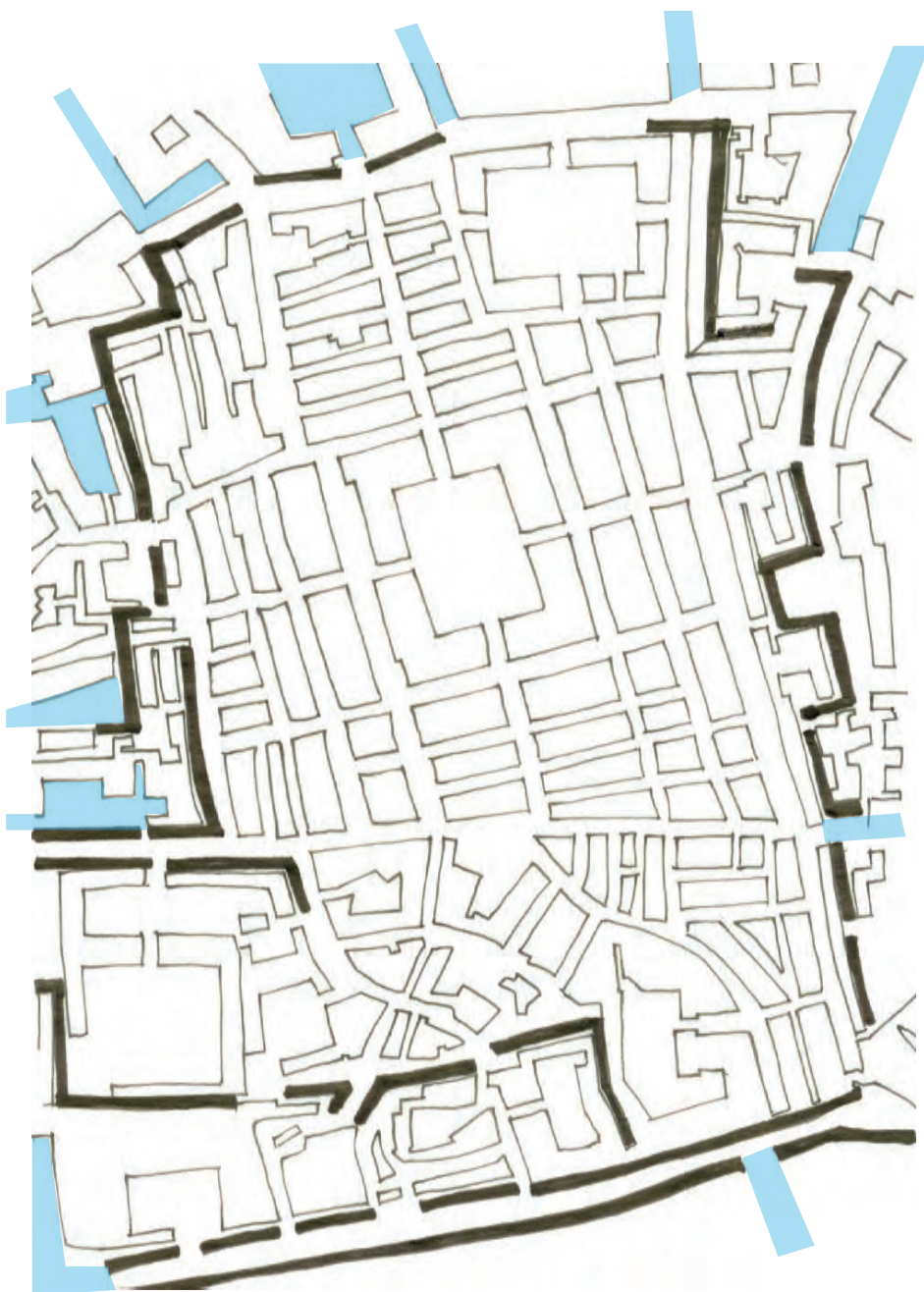




The town on Chichicastenango; also known as Santo Tomás Chichicastenango is situated in the el Quiché sector of Guatemala; a city known for its rich Mayan culture. The city of Chichicastenango is a large indigenous town located Northwest of Guatemala City. This area is well known for its famous market days on Thursdays and Sundays; where vendors sell anything from wild chickens to machetes.

The market district of Chichicastenango forms a square plan, with comedores (small eateries) located in the center. A majority of the vendors in the market are female. Although not immediately recognized, the market is highly organized, with vendors of specific goods in their respective sections.





Istanbul's grand bazaar is Turkey's largest covered market; specializing in Turkish carpets, alabaster items, and Turkish pottery. With a dozen restaurants, the grand bazaar allows one to enjoy a lunch while shopping. Today, the Grand Bazaar houses two hamams, two mosques, four fountains, multiple restaurants and cafes; creating a sense of programmatic interlock throughout the market. The bazaar contains two bedestens; masonry structures built for storage and safekeeping, which provide a continuous sense of safety for vendors within the marketplace.

site

A high-angle, wide shot of a bustling street market in a densely populated urban area. The street is filled with people, many of whom are carrying items on their heads or backs. On the left, there are makeshift stalls made of corrugated metal and wood. In the center, a large, light-colored, tent-like structure is visible. The background shows more buildings and a hazy sky. The overall scene depicts a vibrant but crowded marketplace.

*"In the coming days, this **wonderland of commerce** once
dried starfish, herbs, potions, perfumes, produce and cheap Chinese*



packed with over thousands of merchants selling art, pigeons, turtles, wares—will bustle back to life.”

-Pooja Bathia



IMPLIED VS [ACTUAL] SITE

CARGO STORAGE

SEAPORT
TERMINAL

GREENSPACE

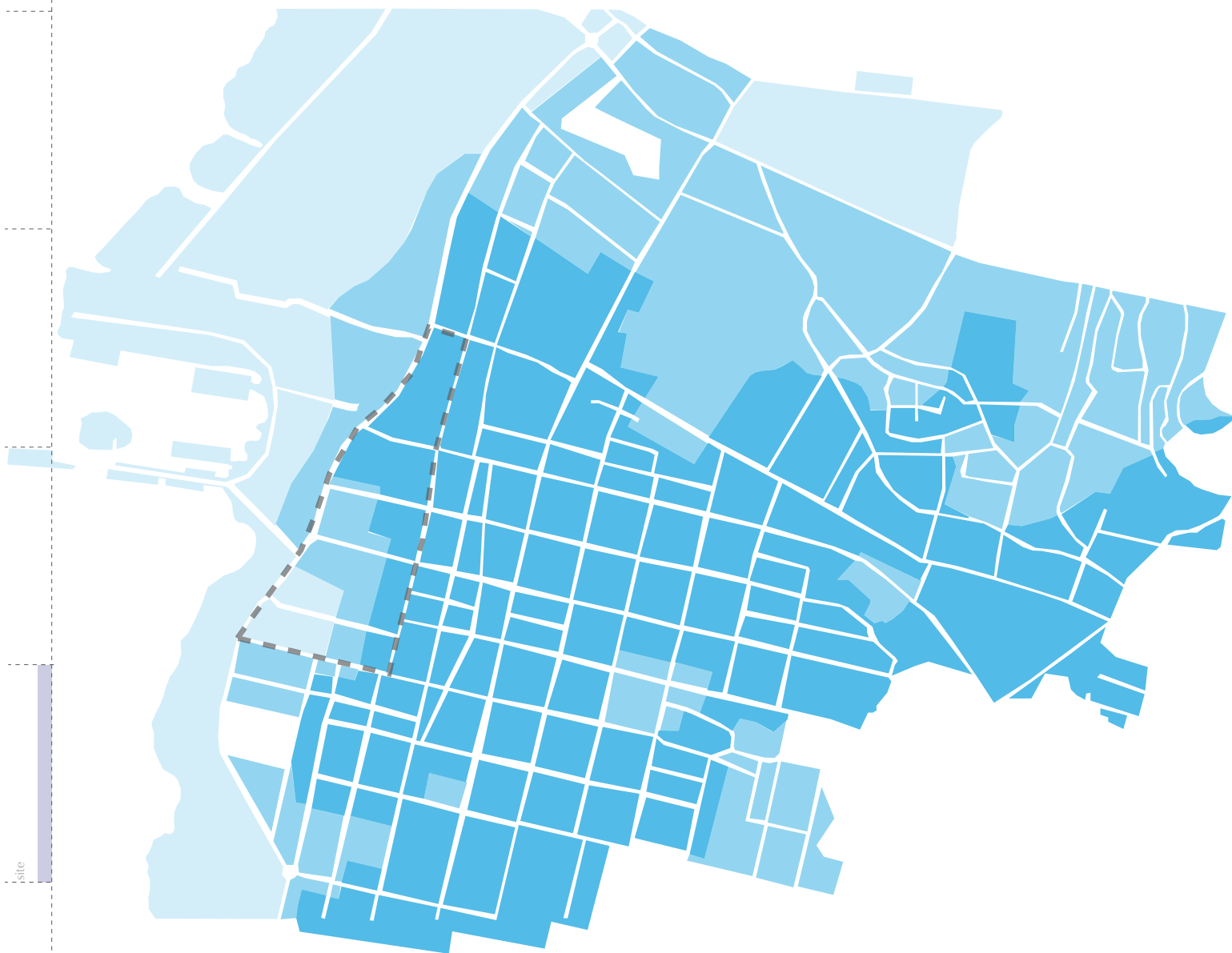
SHANTY TOWN

GATEWAY

TRANSPORTATION
CENTER

IRON MARKET

site



POPULATION






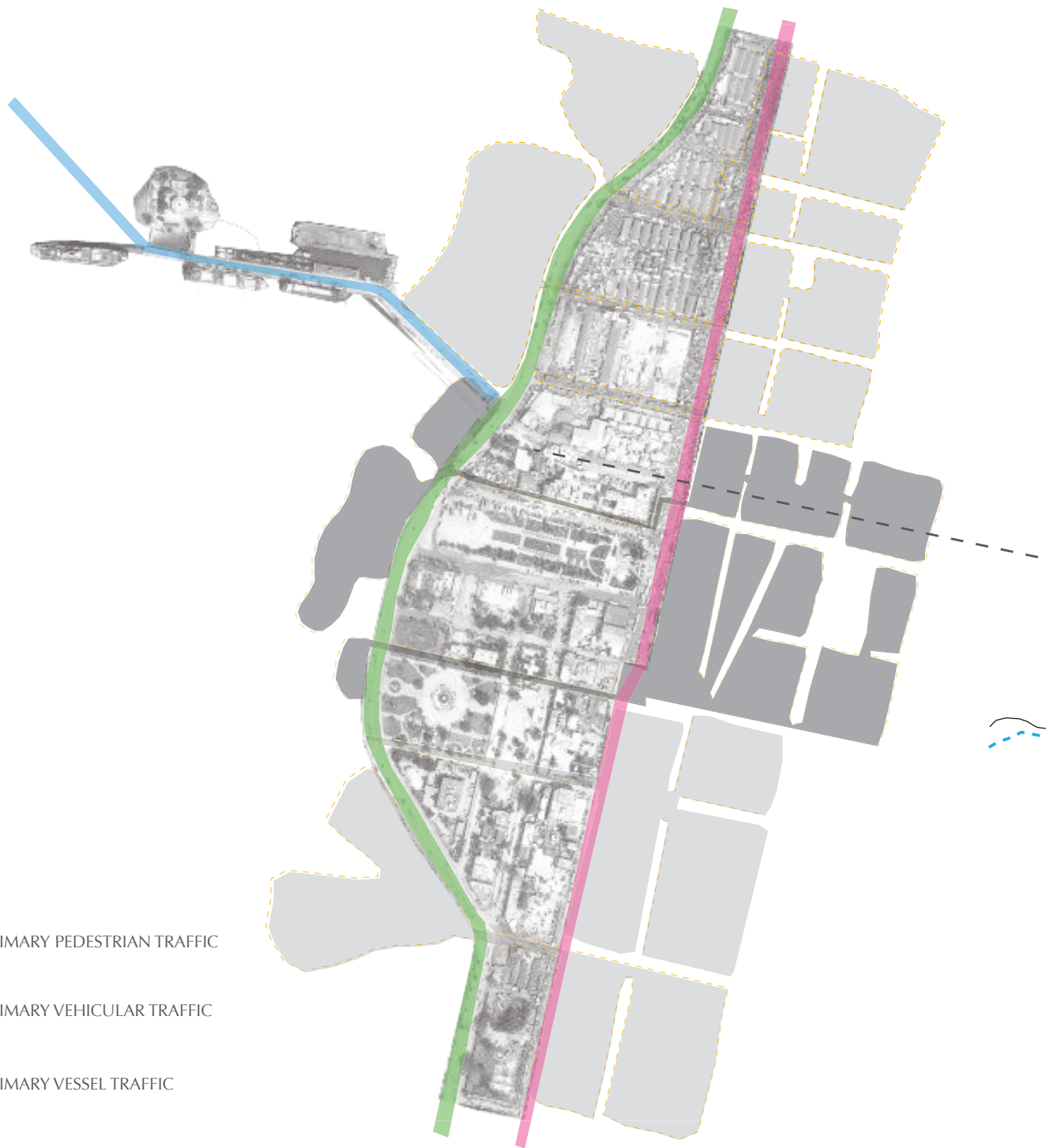


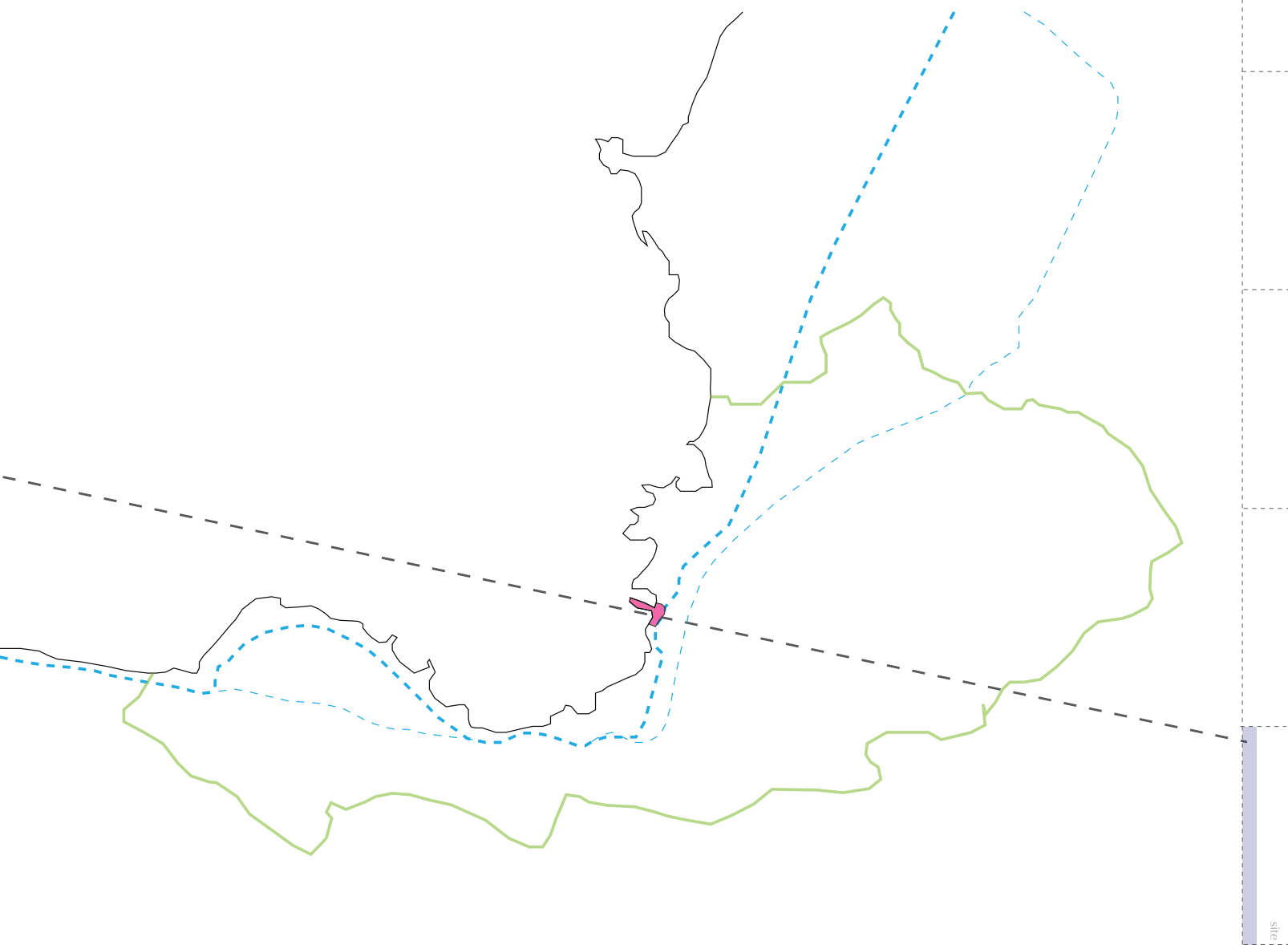


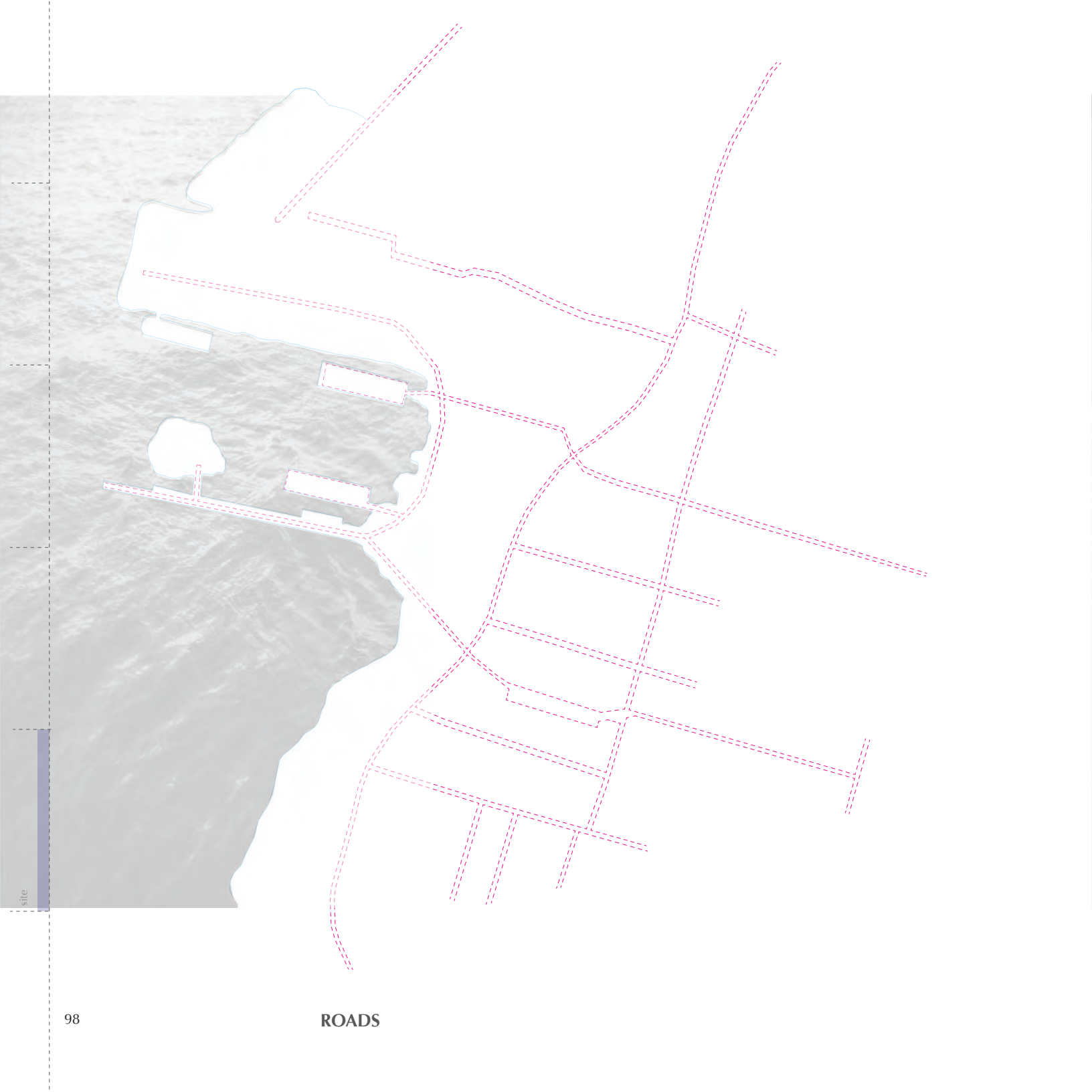




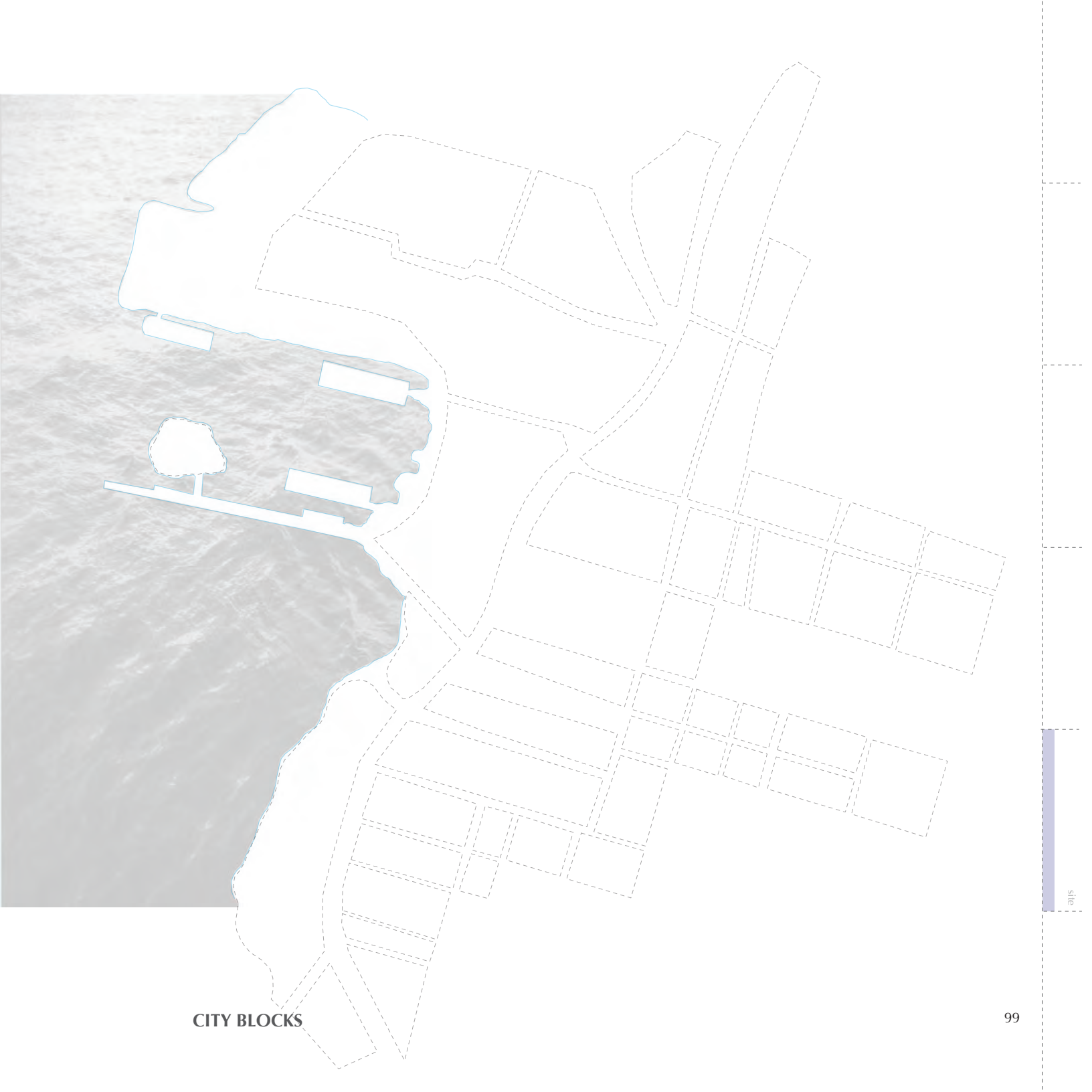
-  PRIMARY PEDESTRIAN TRAFFIC
-  PRIMARY VEHICULAR TRAFFIC
-  PRIMARY VESSEL TRAFFIC

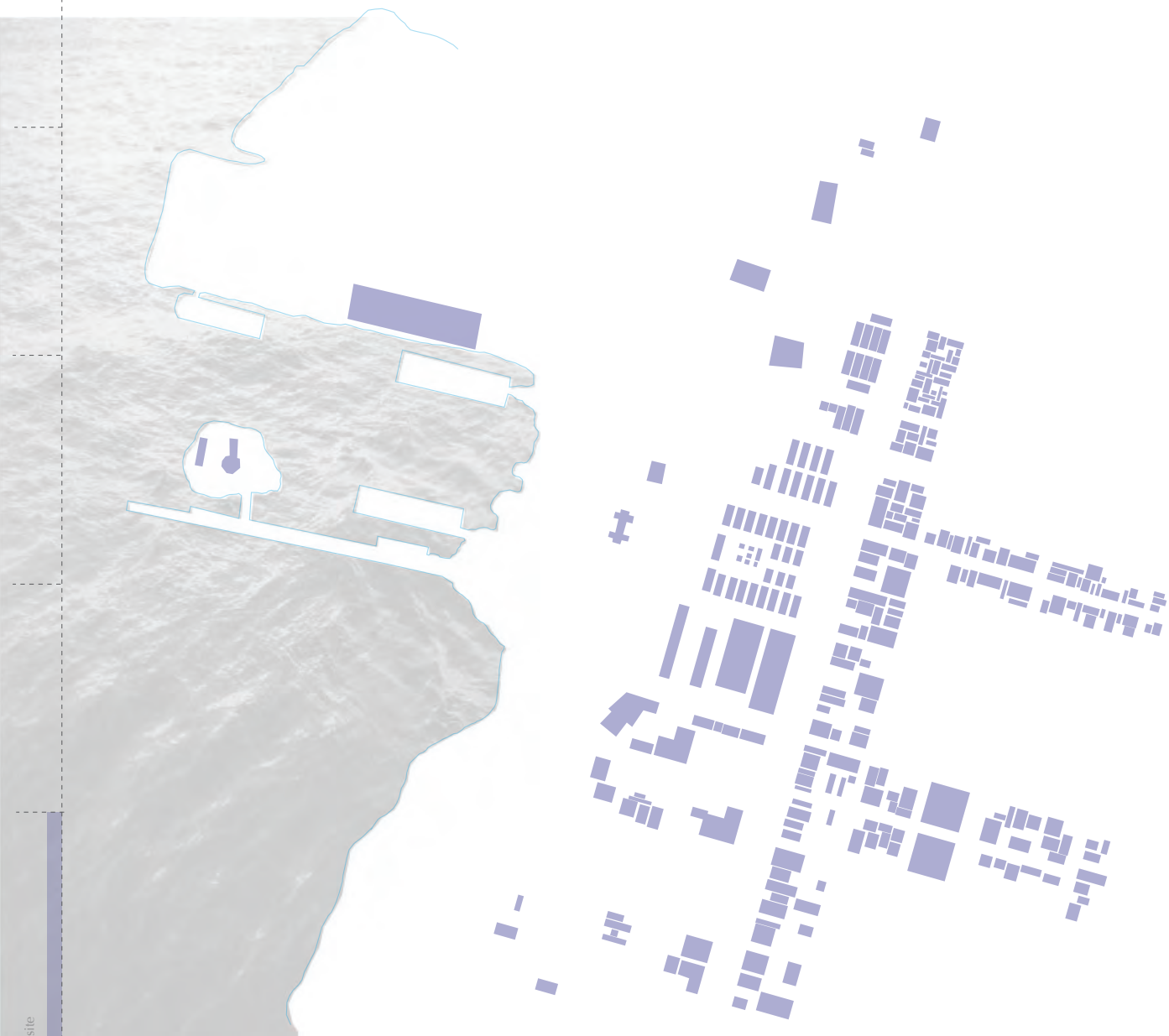




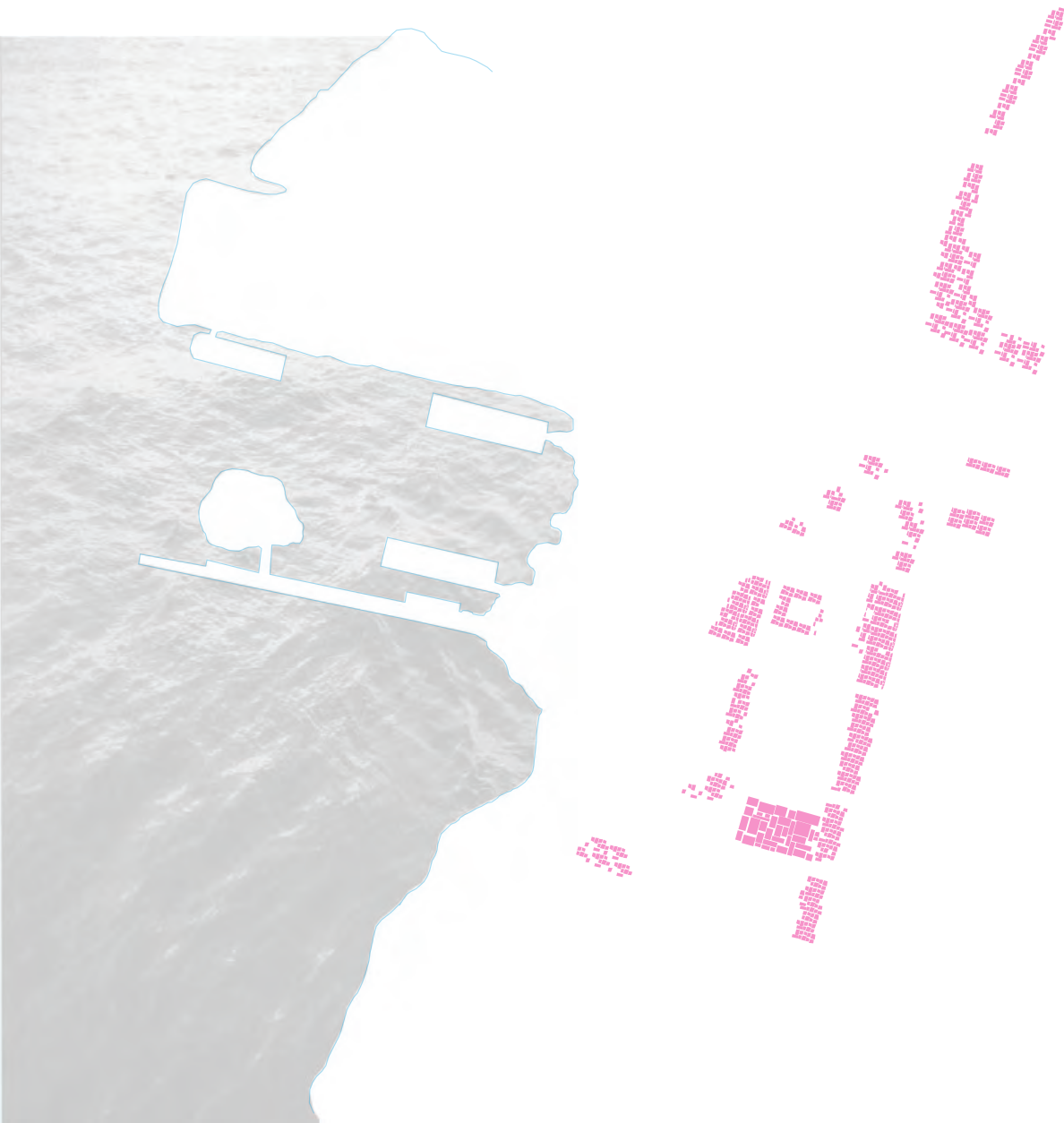


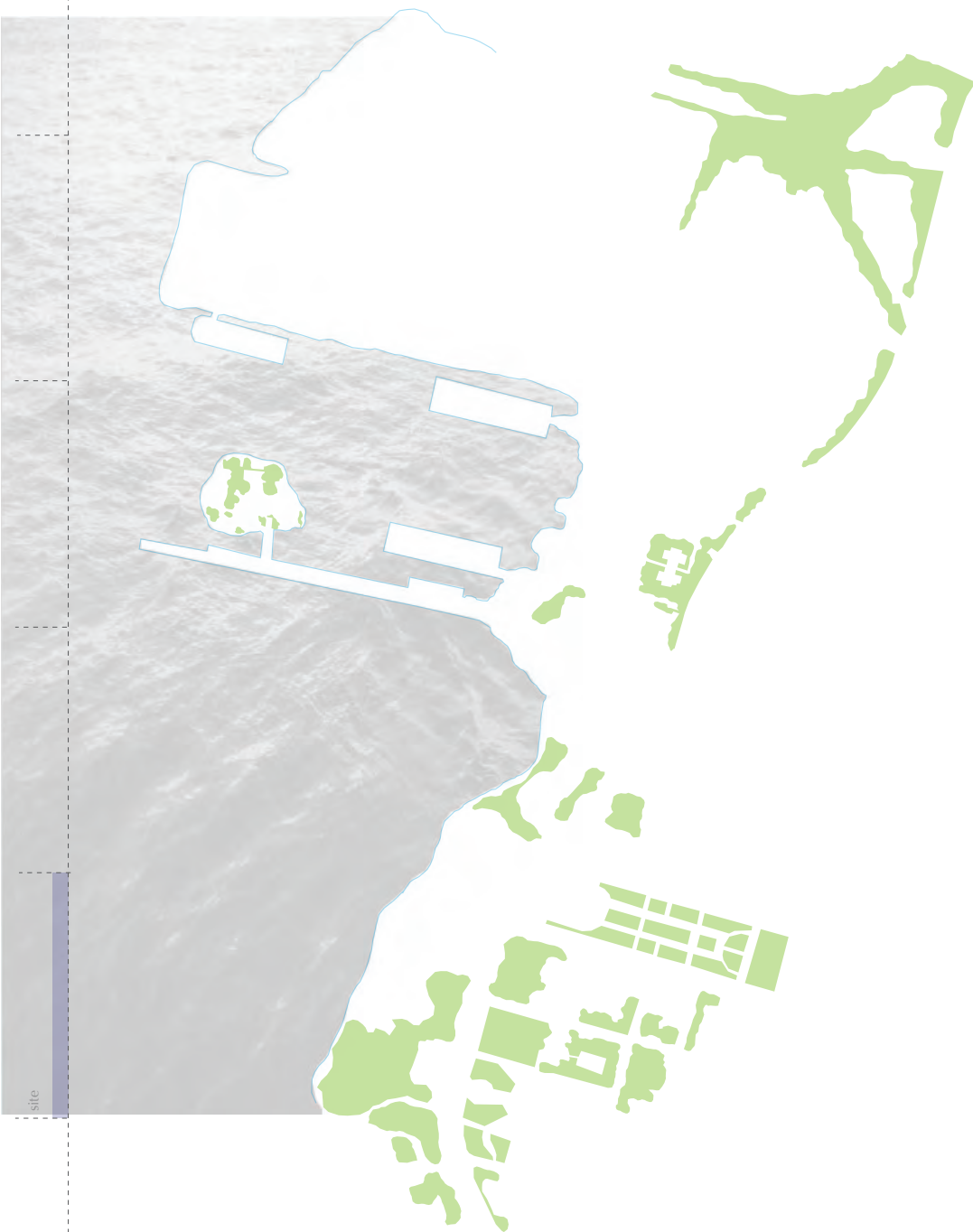
site



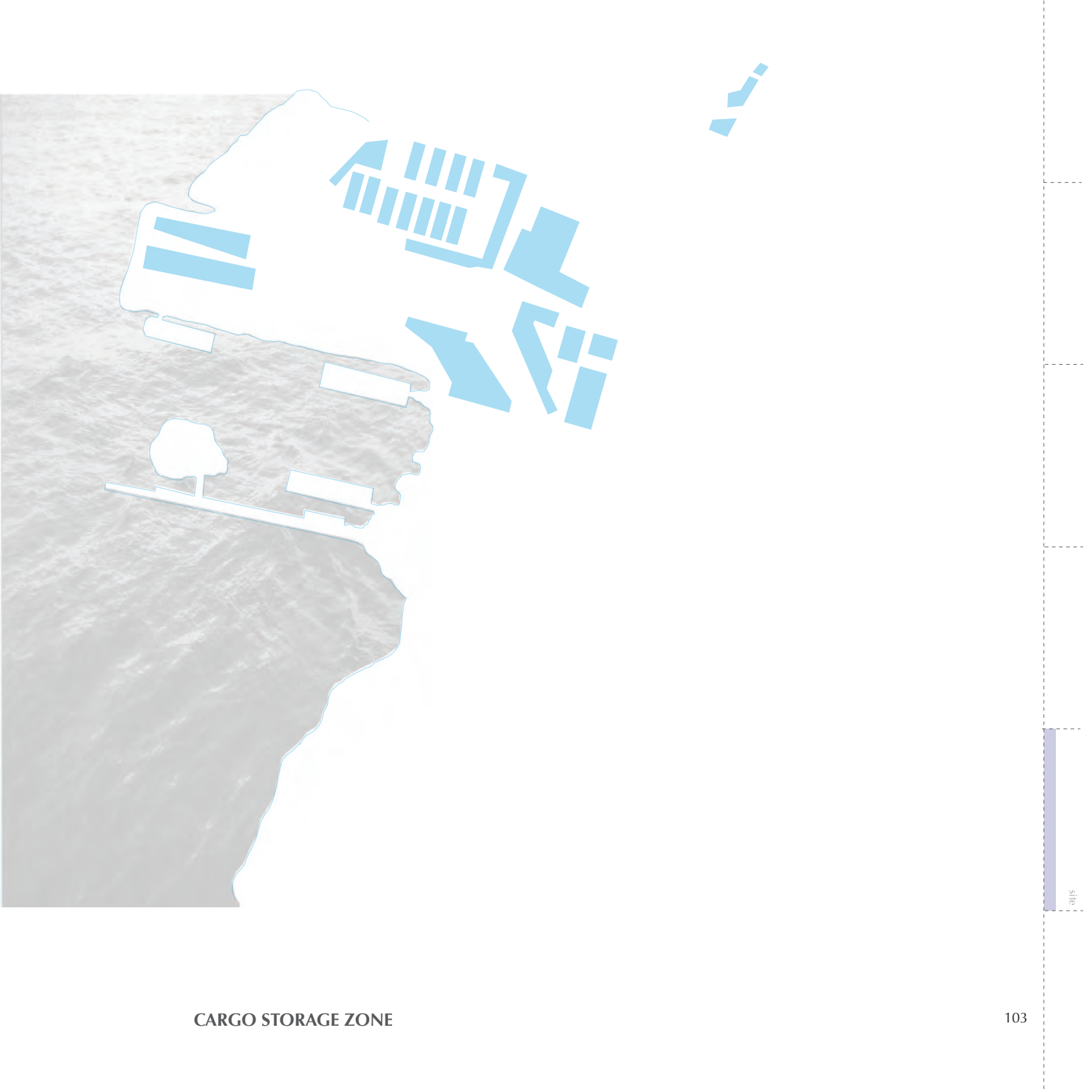


site





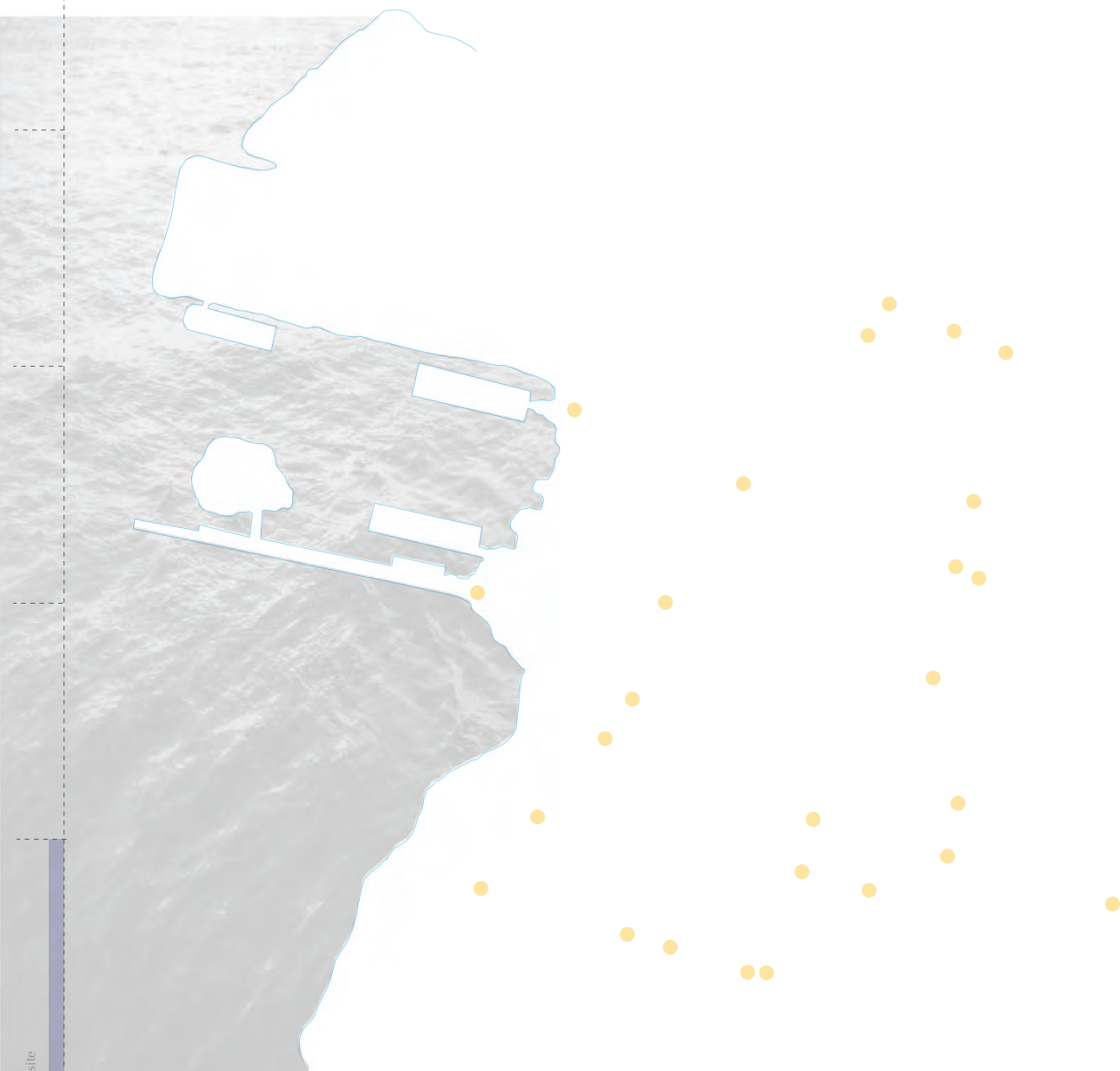
GREENSPACE



CARGO STORAGE ZONE



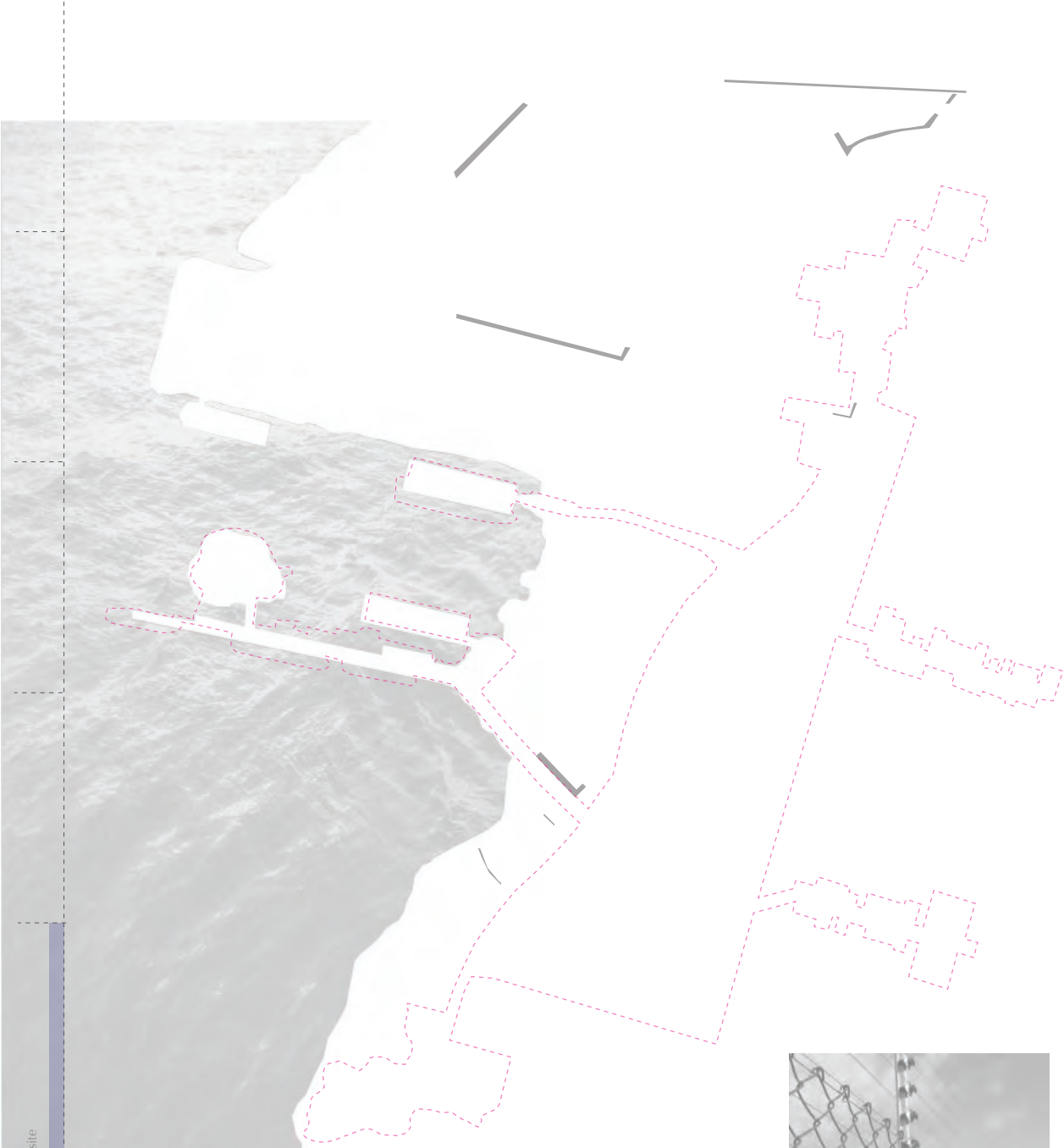






site

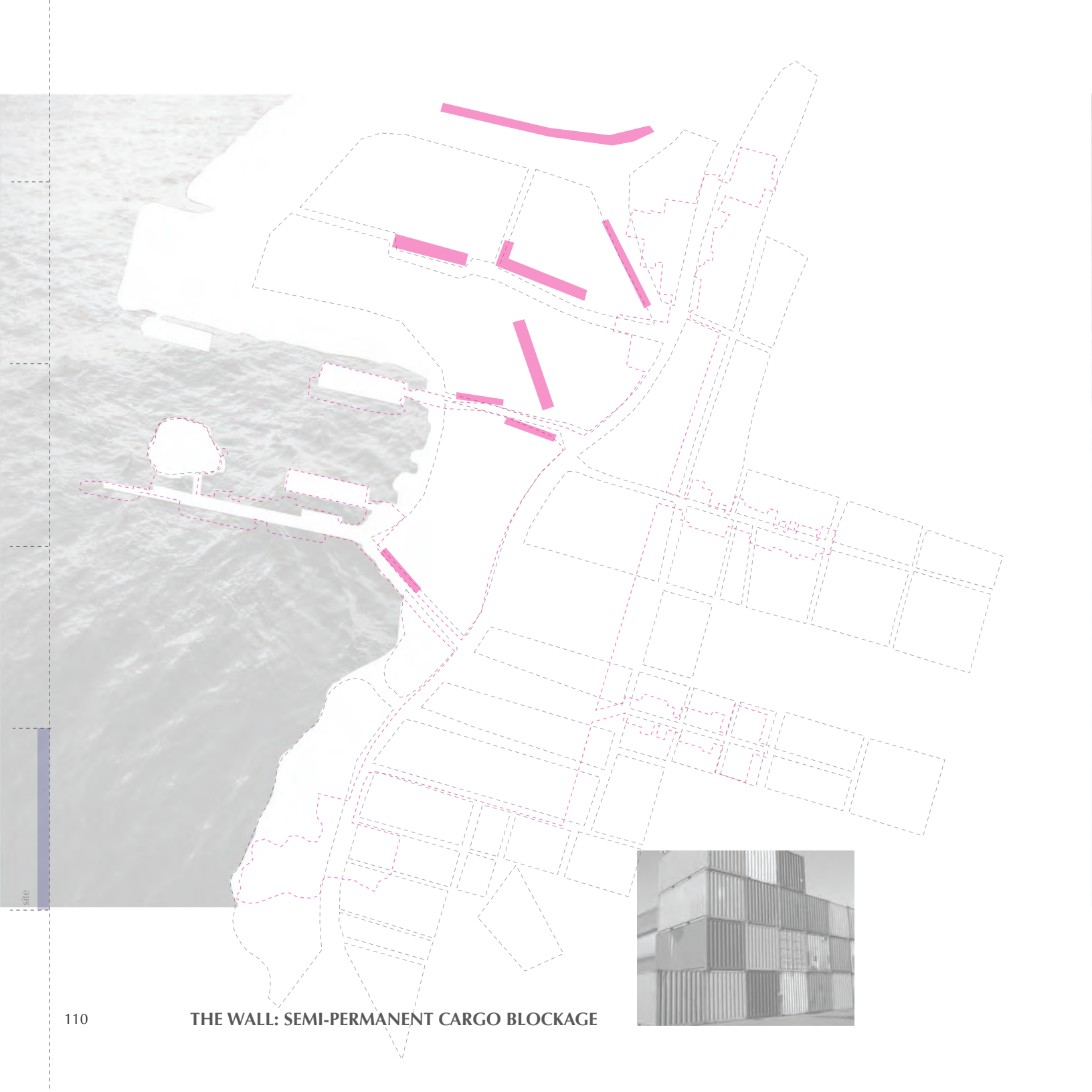
SLIP- END PUBLIC SPACE





THE WALL: BLOCKED ZONES



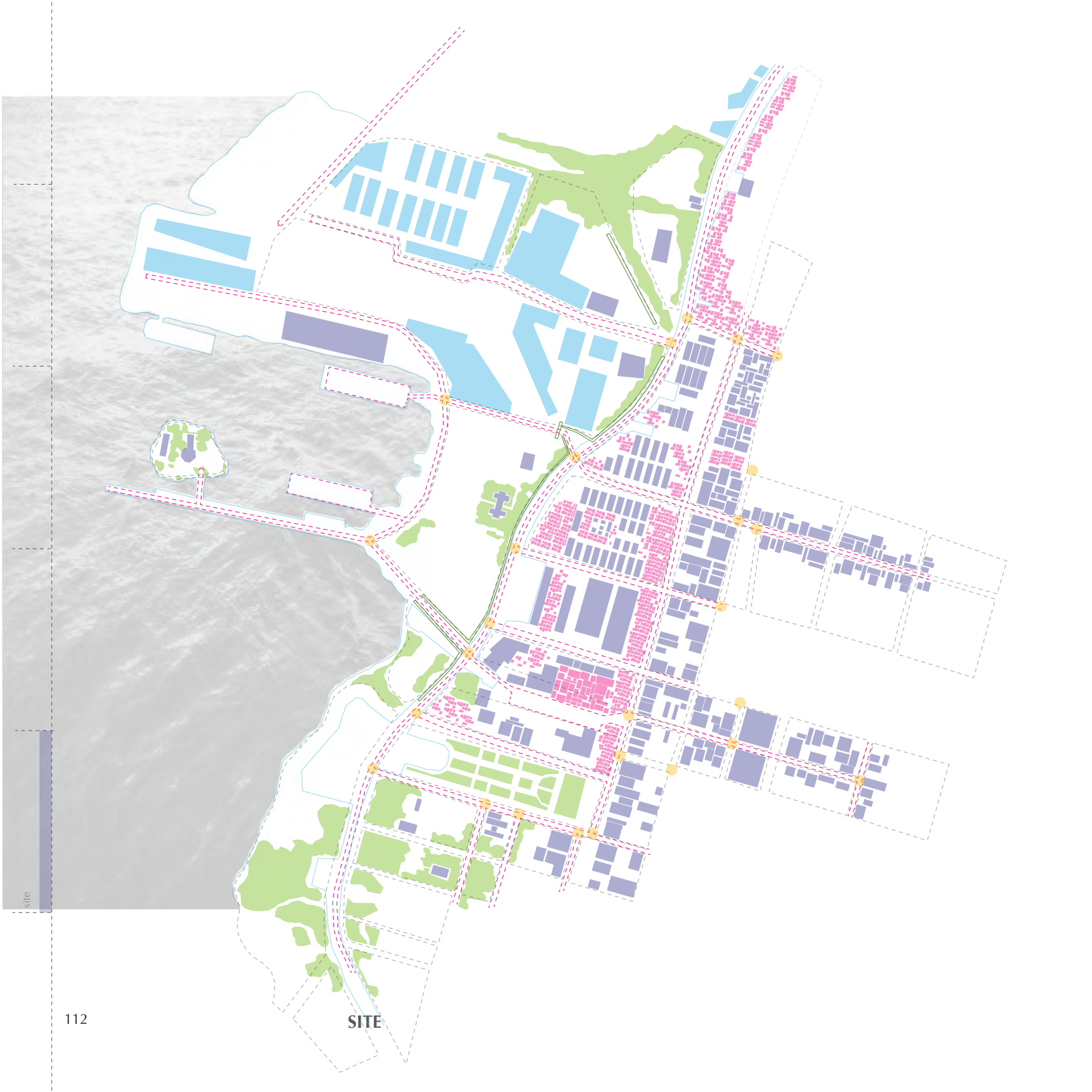


site



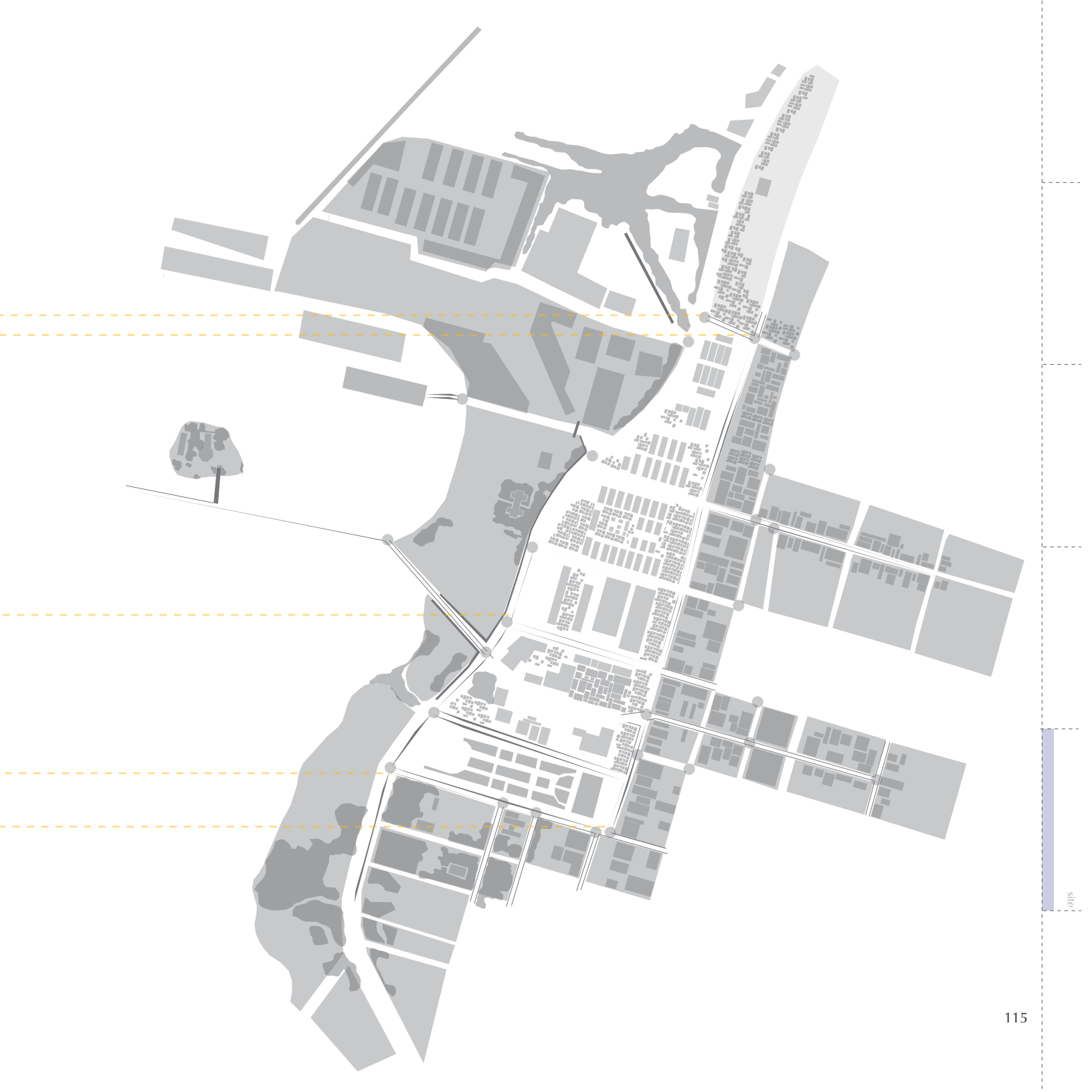


THE WALL: OVERALL SECURITY SYSTEM

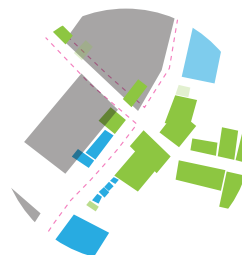
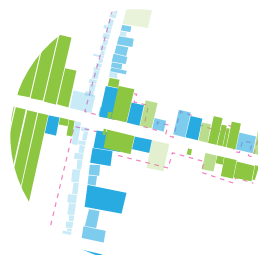
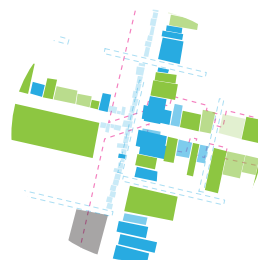
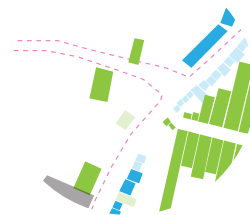


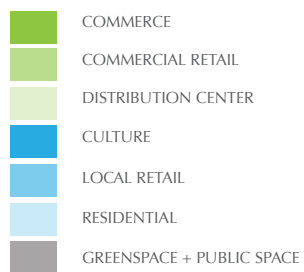




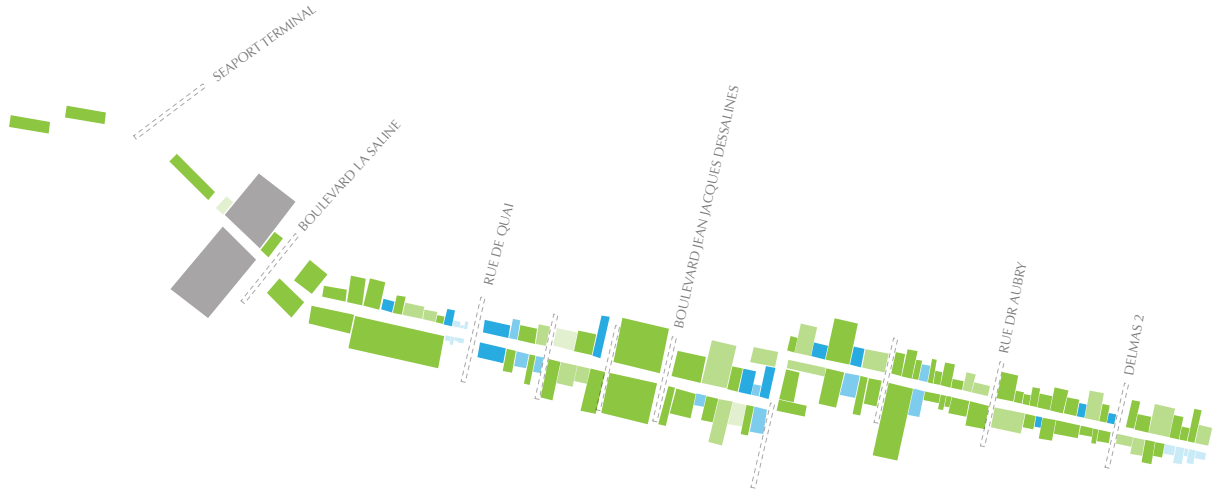


The four axial intersections within the site serve as major nodes where the idea of commerce and culture collide. These can then be interpreted as hinge points or apertures to where primary program can be situated; therefore resulting in a more organized mixing of these already existing programmatic identities.



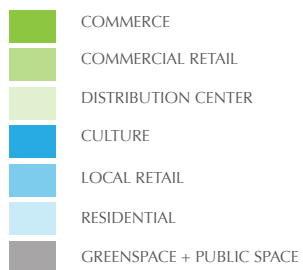


Commencing at the Seaport Terminal, the horizontal axis in the commercial district of Port au Prince features a series of commercial structures that house the city's major companies and retail distribution centers.

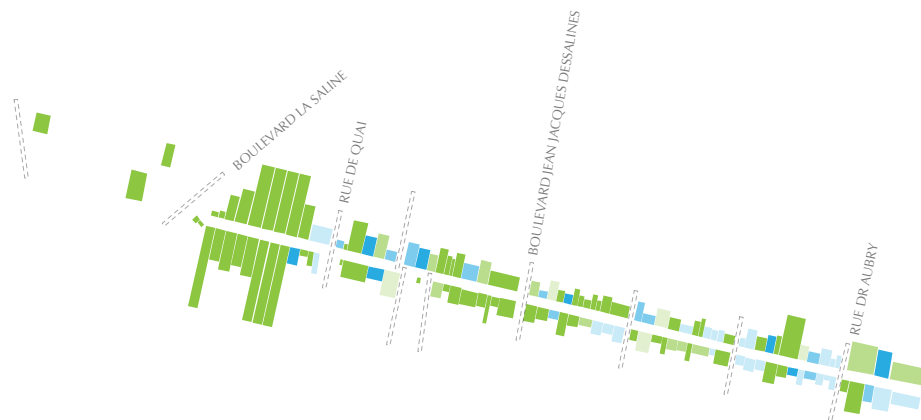


- COMMERCE
- COMMERCIAL RETAIL
- DISTRIBUTION CENTER
- CULTURE
- LOCAL RETAIL
- RESIDENTIAL
- GREENSPACE + PUBLIC SPACE

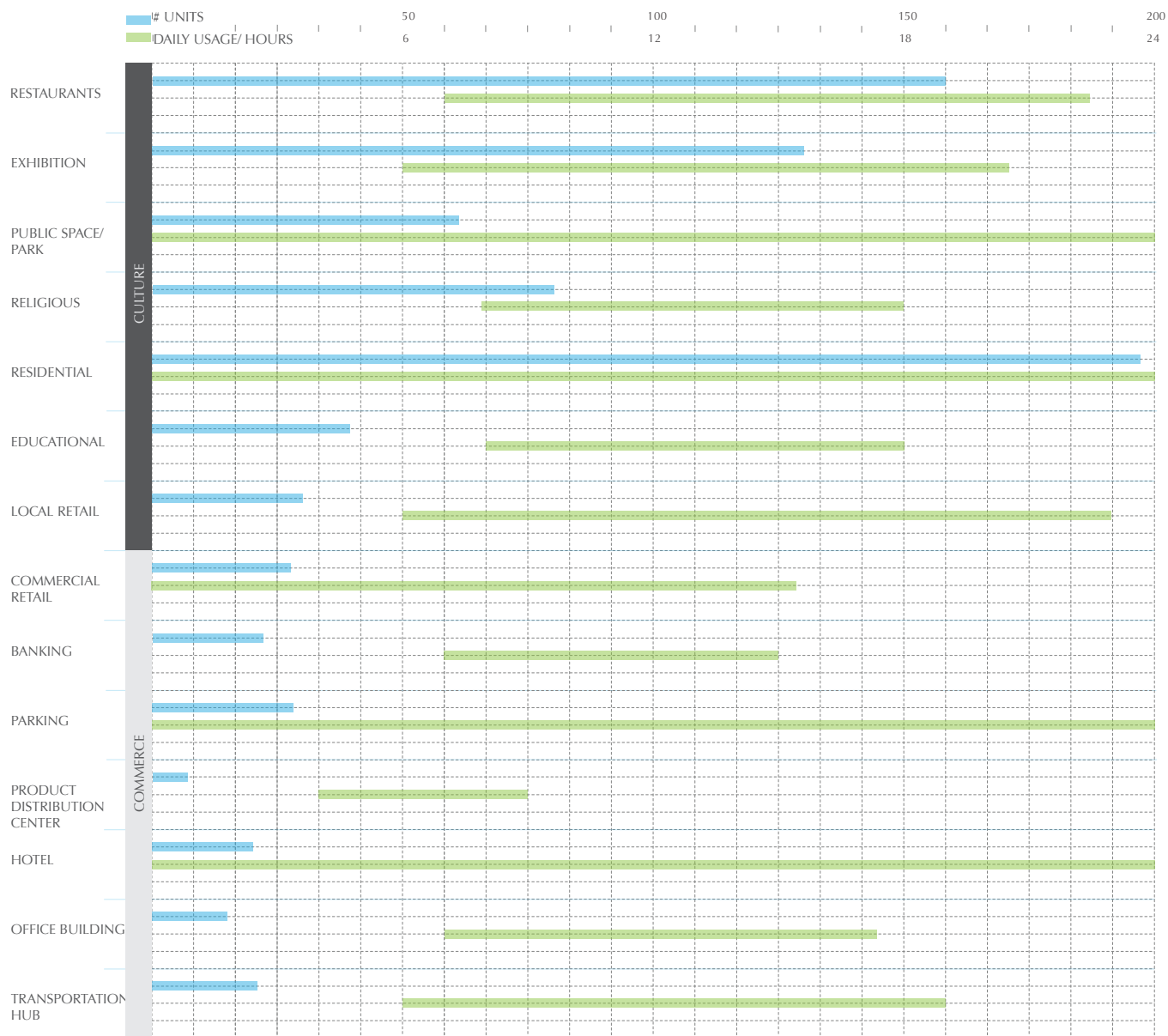
RUE TRAVERSIERE



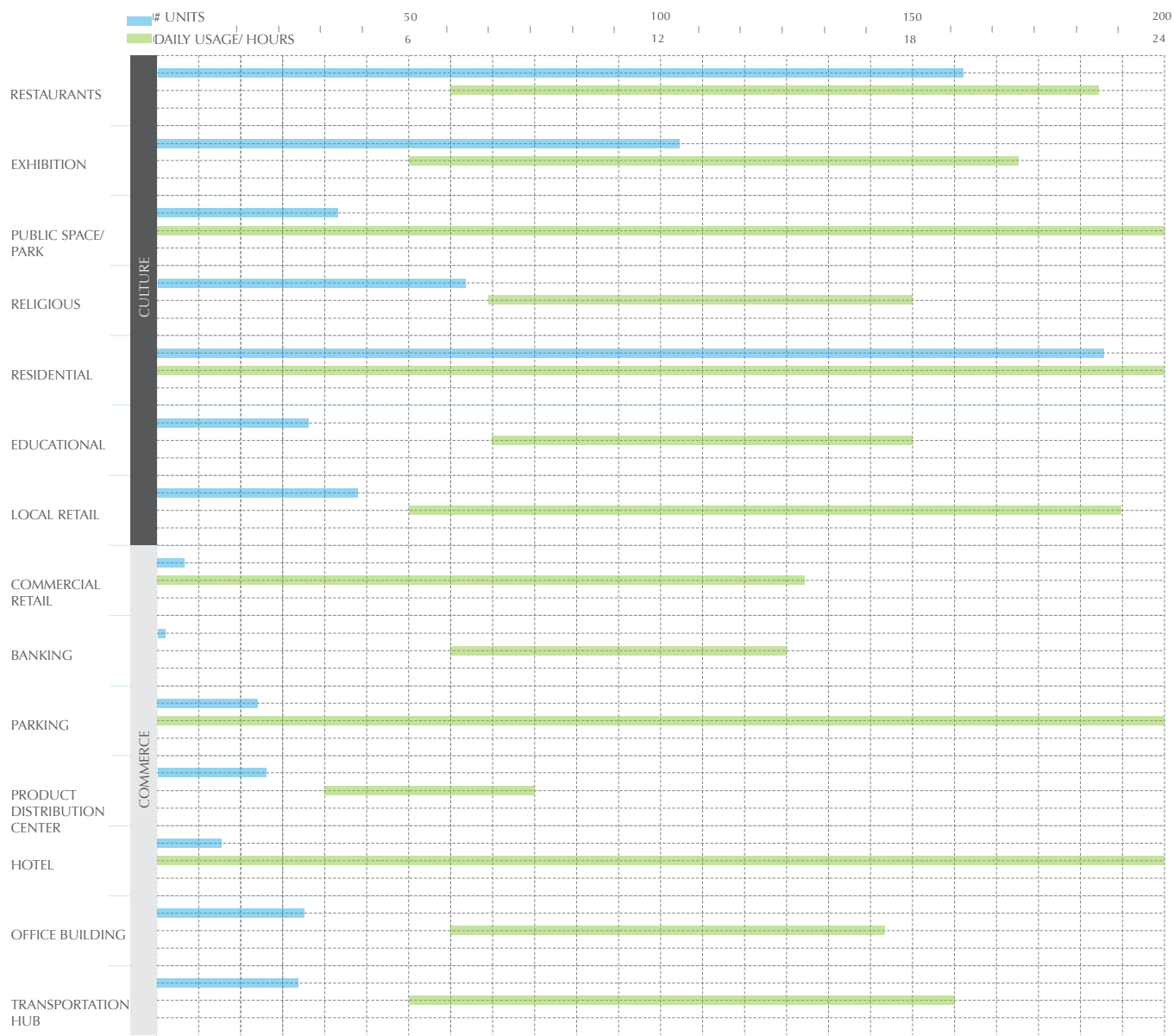
RUE TIREMASSE





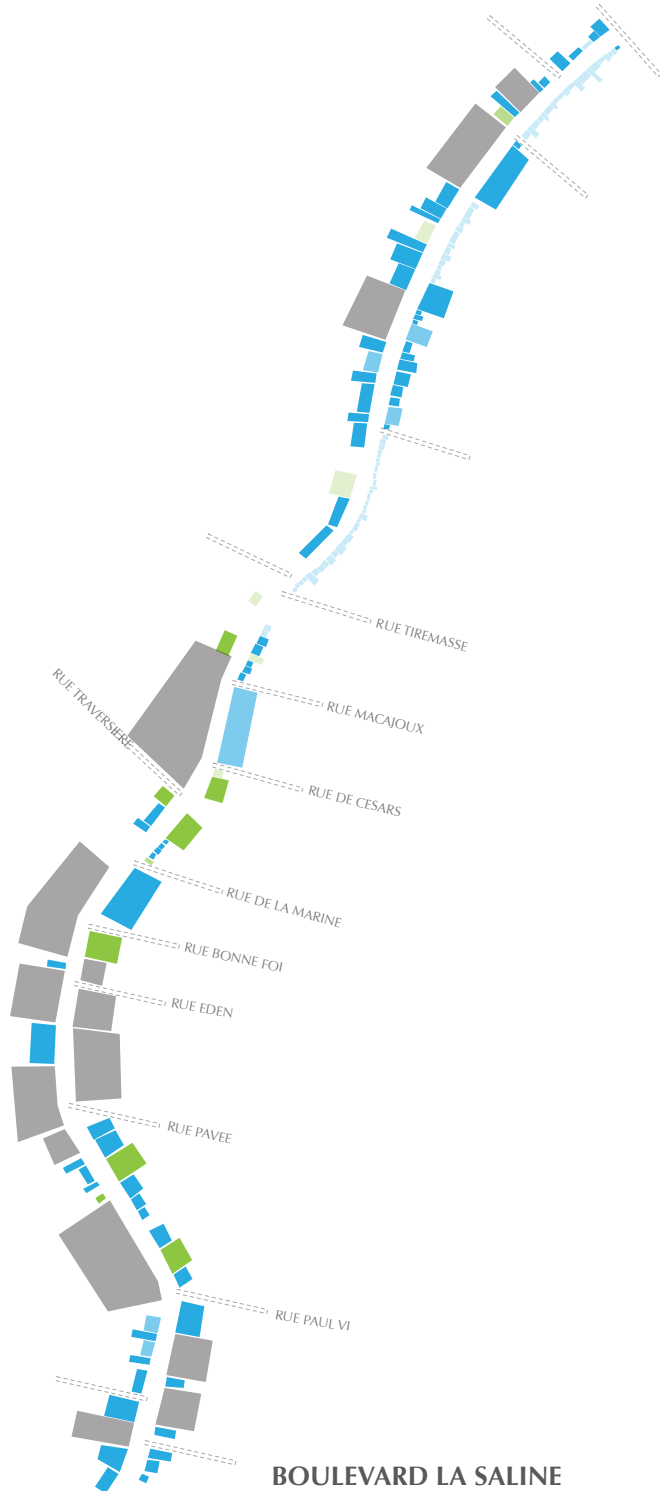




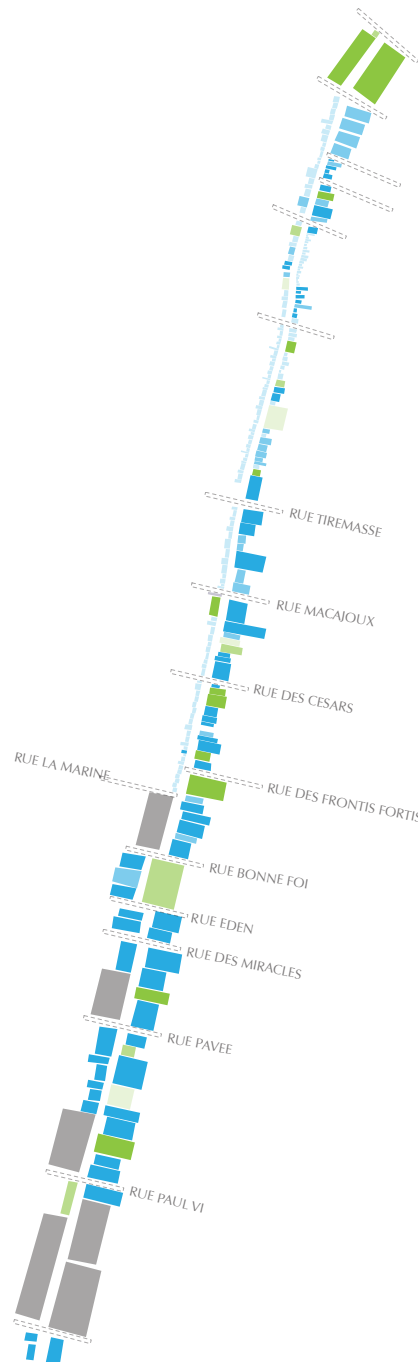
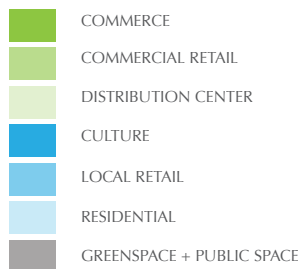


The vertical axis is representative of the cultural aspects of Port au Prince. Local vendors fill the streets; while open spaces are occupied by city dwellers.

- COMMERCE
- COMMERCIAL RETAIL
- DISTRIBUTION CENTER
- CULTURE
- LOCAL RETAIL
- RESIDENTIAL
- GREENSPACE + PUBLIC SPACE

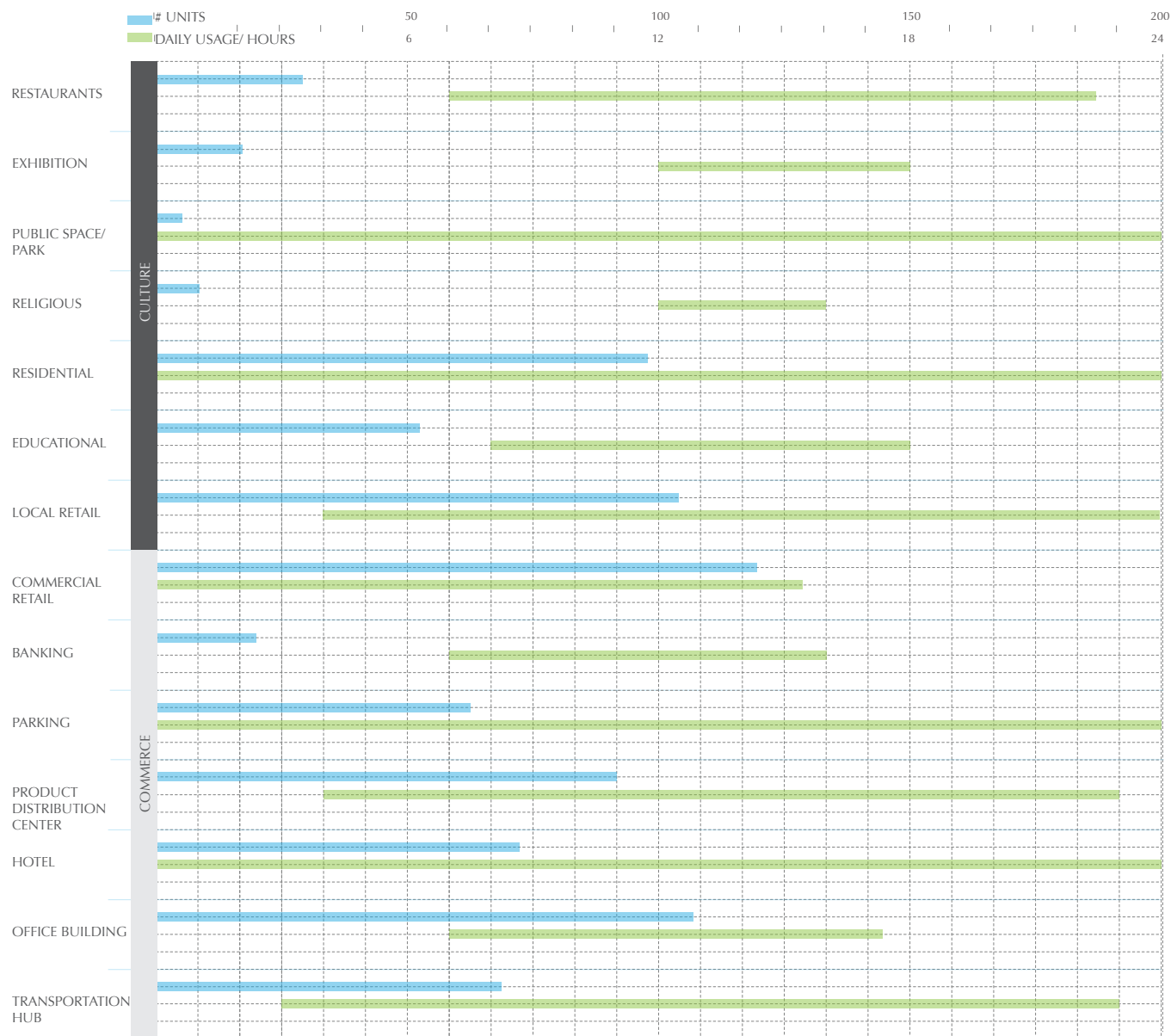


BOULEVARD LA SALINE

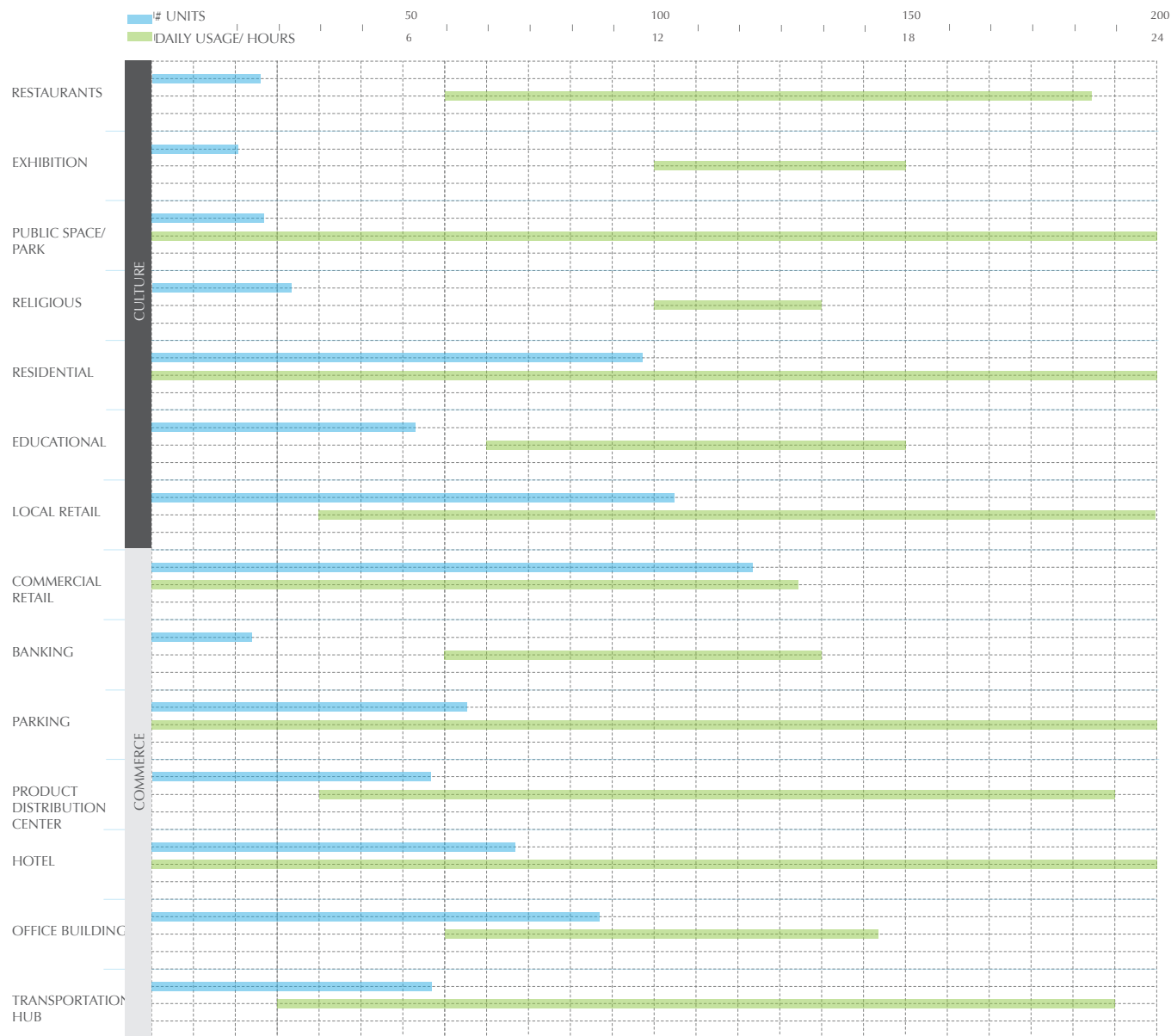


RUE DE QUA









	FACTORY
	RELIGIOUS STRUCTURE
	RESIDENTIAL
	RETAIL/ MARKET
	GREENSPACE
	ENTERTAINMENT
	GOVERNMENT BUILDING
	EDUCATIONAL FACILITY
	OFFICE
	RESTAURANT



“...the economic and cultural fulcrum of the city.”
-J. Wintz





This area is known to be the center of distribution throughout the city. Numerous warehouses, factories, and storage centers are widespread throughout this area. A majority of the commercial zones in this section of the city utilize these facilities for business. Along the westernmost area of the site (toward the coast) a series of storage and warehouse units are present. One reason why this is particularly convenient is because of the many shipments that come into the city through the nearby port.

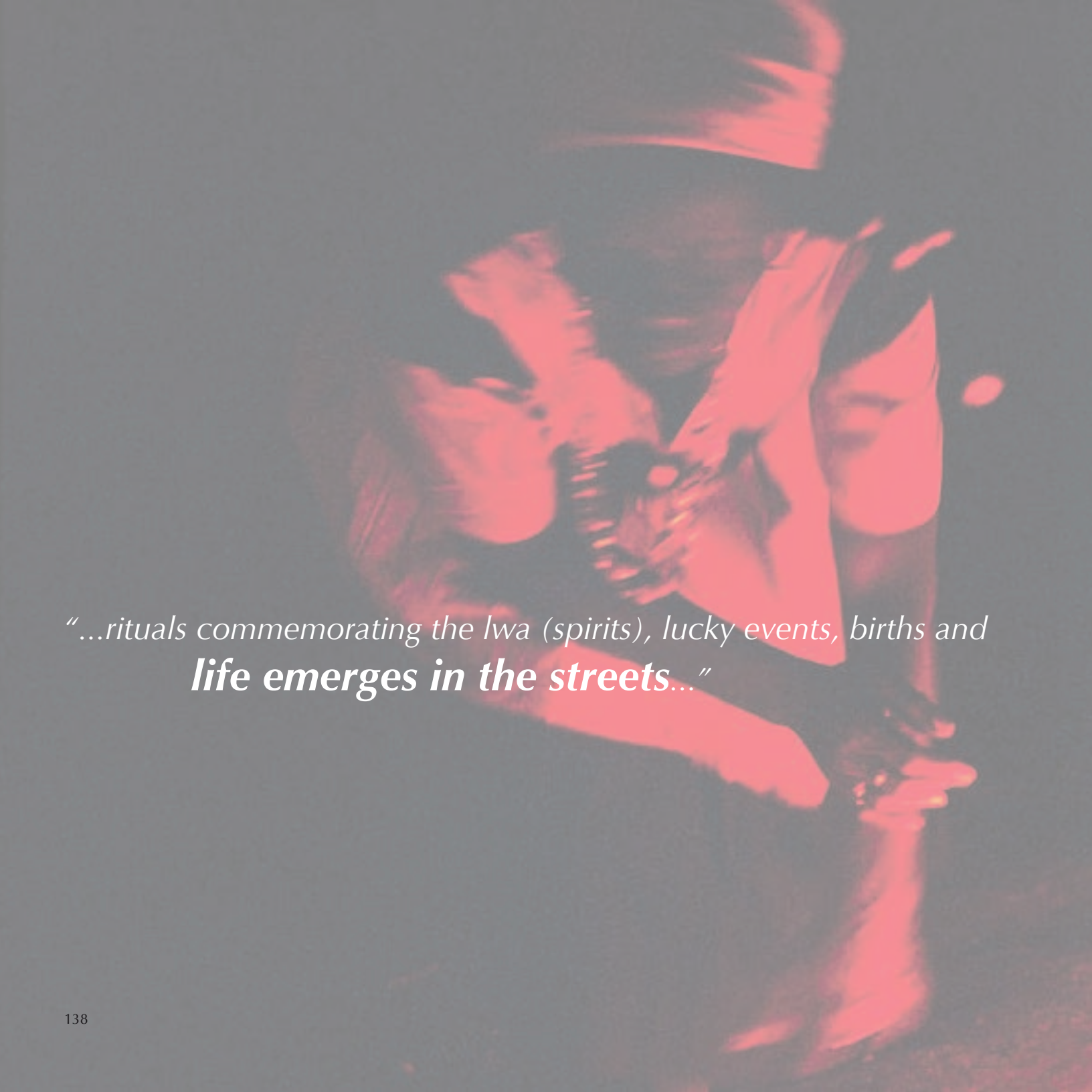




Within the ten-minute radius of the site, a trend of educational and religious structures seems to be evident. A majority of the Christian-based religious structures exist within this area. This zone is situated directly between the city center and the city periphery. This centralized condition is highly convenient for those in all sectors of the city.



The outermost portion of the urban sector of Port au Prince is primarily residential; yet seems to incorporate various forms of entertainment. In these areas, a majority of smaller-scale entertainment can be witnessed. Local singers, voodoo ceremonies, and dancers make it a ritual to perform on a daily basis. The primary reason for this is because of the spacious quality of the area; unlike the center of the overpopulated city. Although some of these cultural aspects of Haitian tradition are not celebrated on a daily basis toward the commercial district of the city; it is solely because the lack of available space to do so.

A person, likely a dancer or performer, is captured in a dynamic, low-to-the-ground pose. They are wearing a white long-sleeved shirt and dark pants. Their arms are extended, and their body is angled, suggesting movement. The background is dark and out of focus, with some light reflecting off the person's shirt and pants. The overall mood is artistic and energetic.

*“...rituals commemorating the Iwa (spirits), lucky events, births and
life emerges in the streets...”*



deaths involve dancing, drumming and spirit possession--- a sense of

-Anonymous

Operational Analysis with GeoEYE-1 Data Acquired 13 January 2010 and QuickBird data acquired 4 March 2009

This map presents an overview of temporary shelter locations of displaced Haitians in Port-au-Prince and Cap-Haïtien, as identified in satellite imagery recorded on 13 January 2010. These GPS locations range in size from small clusters of survivors (approx. 20–50) to large concentrations of sheltering in the two thousands. Locations are primarily situated in open areas away from major buildings, in parks, sport fields, church compounds and grassy margins of main roads. Four case examples are shown in the map. This is a preliminary analysis and has not yet been validated in the field. Please send printed feedback to UNWATER/UNGISAT.

Earthquake 7.0M

17 January 2010
(21:00:00 UTC)
Version 2.0

Glide No:

EQ-2010-000009-HTI



Legend

	Aerialist		Likely informal IDP site
	Port		Main Building Complex
	Bridge		Park / Forest
	Culvert		River
	Foot bridge		Unpaved / Motor no
	Primary road		Railroad
	Secondary / Urban Road		

Map Scale for A3: 1:55,000
UTM grid coordinates given in Data extracted
Elevation contour (map is 20 meter intervals)
Background satellite imagery GeoEye-1 13 January 2010

	Meters
0 250 500 1,000 1,500 2,000 2,500	
Satellite Data (1)	GeoEye-1
Imagery Date	13 January 2010
Resolution	50cm
Copyright	GeoEye 2009
Satellite Data (2)	QuickBird-2
Imagery Date	4 March 2008
Copyright	DigitalGlobe
Source	Google Earth
Road & Urban Data	Open Street Map
Place Names	Google Map-Master
Other Data	MINUTEMAN USGS, NOAA
Elevation Data	AIRTEL CODEM
Source	NETA & NASA 2009
Analysis	UNIVERSITY OF CALIFORNIA
Map Projection	WUTHER / UTM-82
Projection	UTM Zone 18 North
Datum	WGS-84 / GRS 80

Map Data © 2009 Google
Improve with Google Map Maker

The depiction and use of boundaries, geographic names and related data shown here are not intended to be authoritative nor do they imply official endorsement or acceptance by the United Nations. UNOSAT is a program of the United Nations Institute for Training and Research (UNITAR) providing satellite imagery and related geographic information, research and analysis to UN humanitarian & development agencies & their implementing partners.

  **unitar**
United Nations Institute for Training and Research

UNOSAT

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24/7 Hotline: +41 76 487 4998
www.unosat.org

Slide 1: Example of 3 small ADP clusters

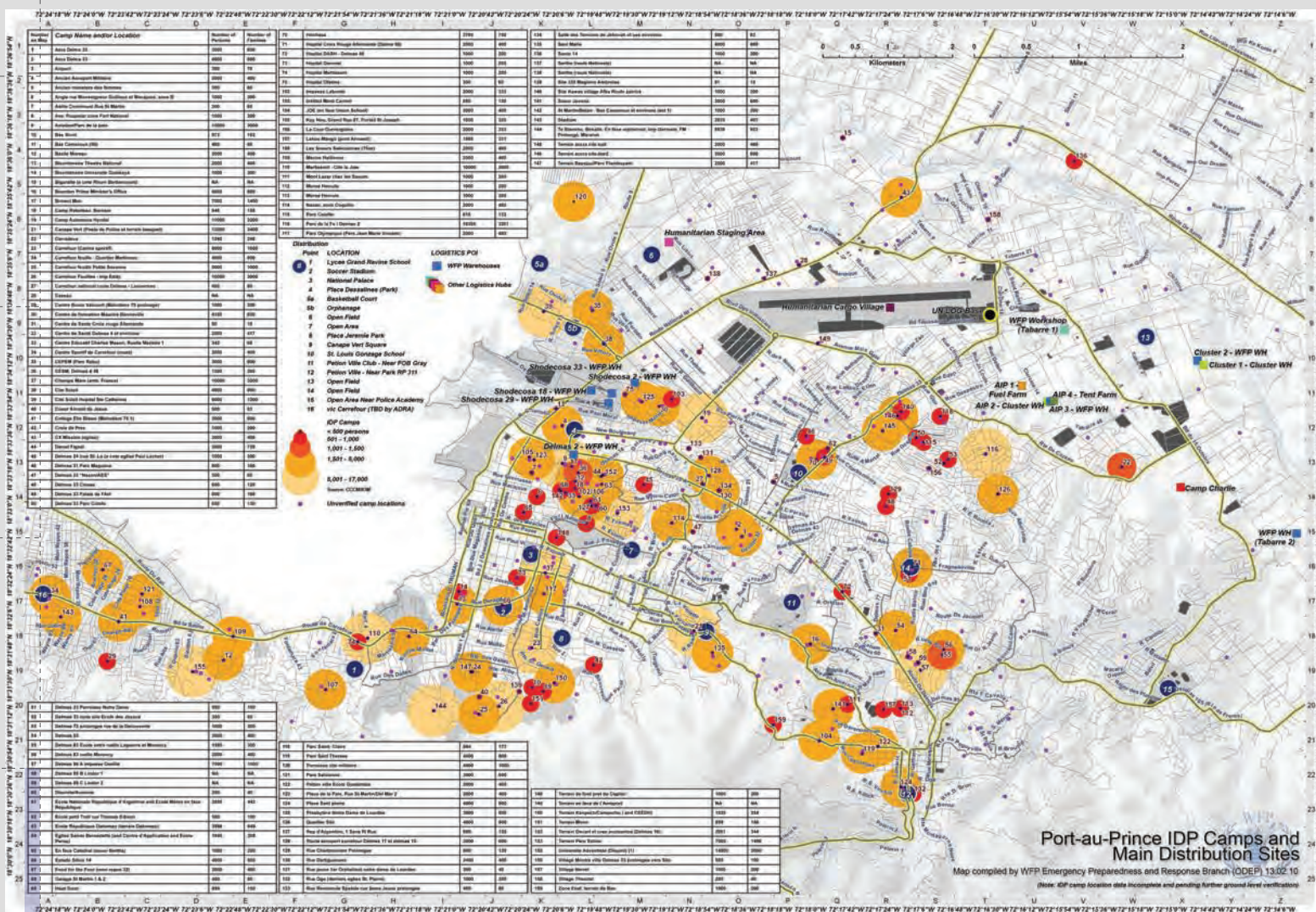
Site 2: Large OP^+ cluster in stadium

Site 3c: IDP cluster in Maim Golf Course



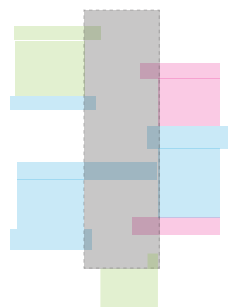
Site 4: Large IAP cluster in stadium



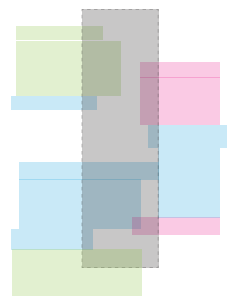


work

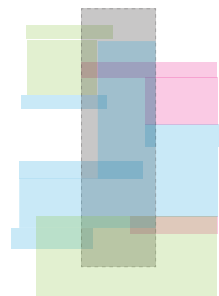
reside



TREND #1
10% FLEXIBLE SPACE IN USE



TREND #2
40% FLEXIBLE SPACE IN USE



TREND #3
80% FLEXIBLE SPACE IN USE

learn

The project seeks to become a new implied wall along Boulevard la Saline; whose programmatic functions operate similarly to the existing operations of the site.

celebrate



formal and informal market life. People utilize the space to vend both imported and national products. Some of the merchandise is displayed on vendor tables, on the floor, or in stalls.

This does not pertain to brand retail stores/companies.



RETAIL





g voodoo ceremonies, religious festivals, national celebrations, and evening gatherings. This involves the distribution of prepared foods, musical instruments, singing, and dancing.







both natives and foreign aid committees hold workshops and meetings throughout the city. At times, classes are held in these zones as well.



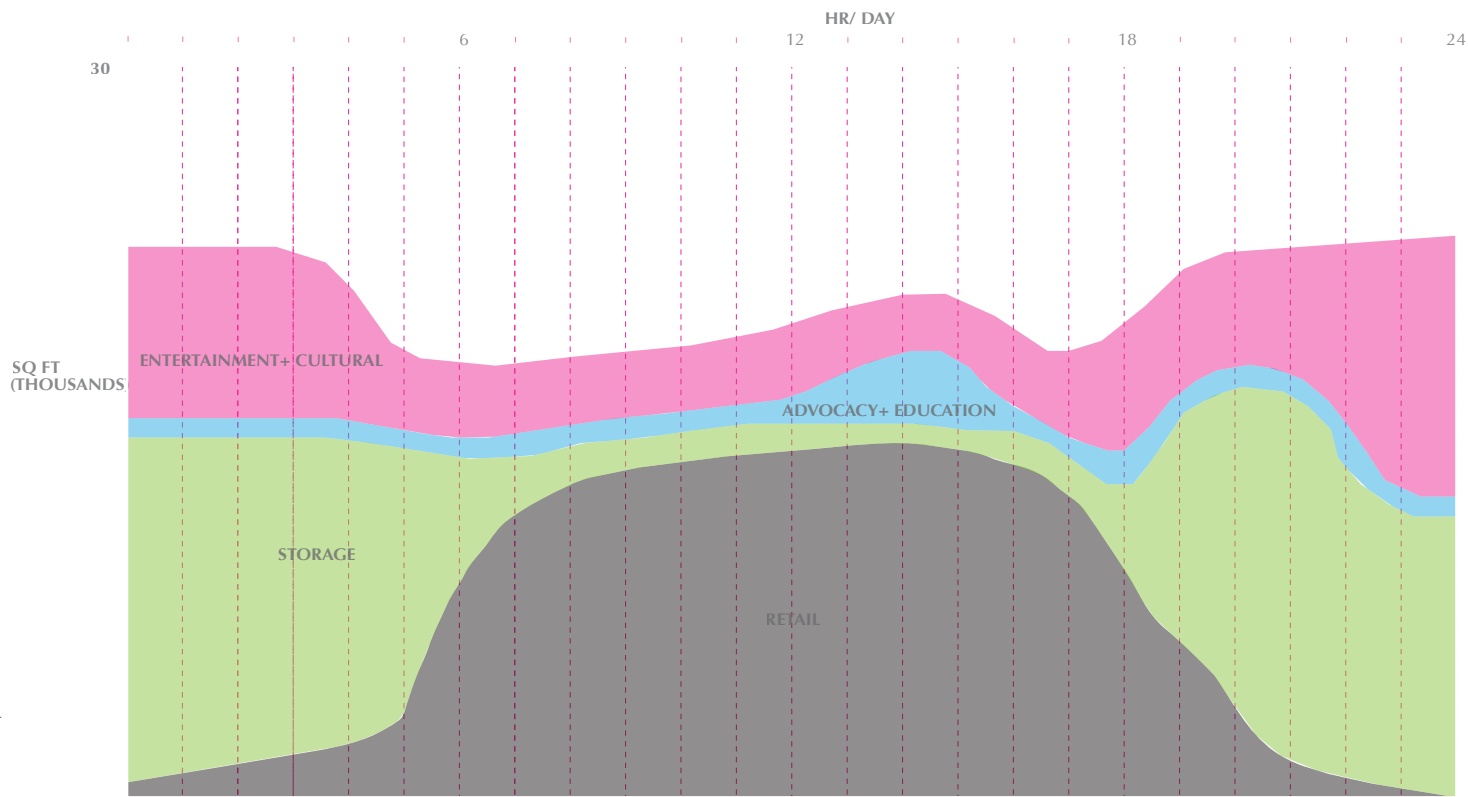




Items are stored in straw sacks, boxes, cartons, or large bags. These are usually goods to be sold in market the succeeding days. Items in storage are often stored for easy display.



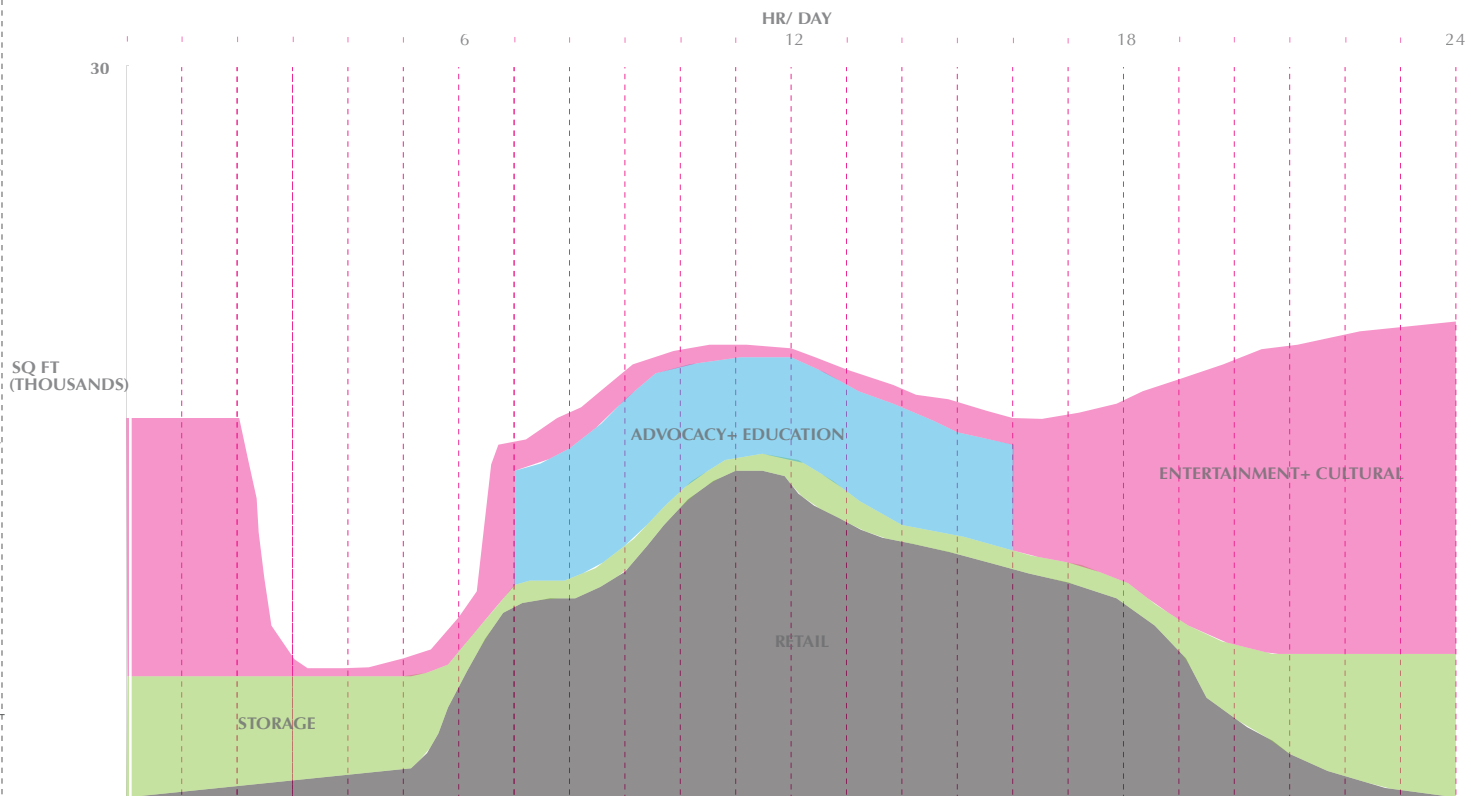


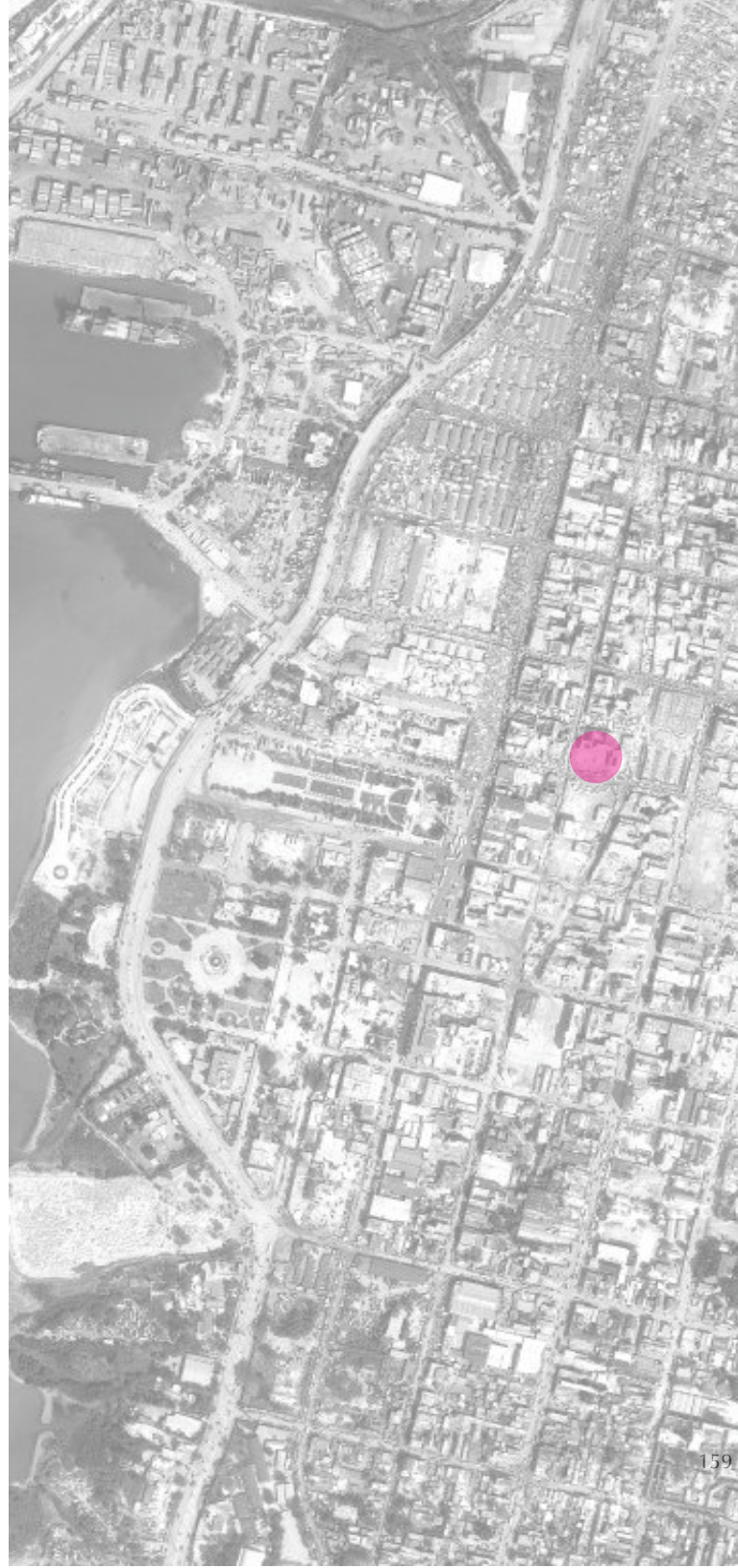


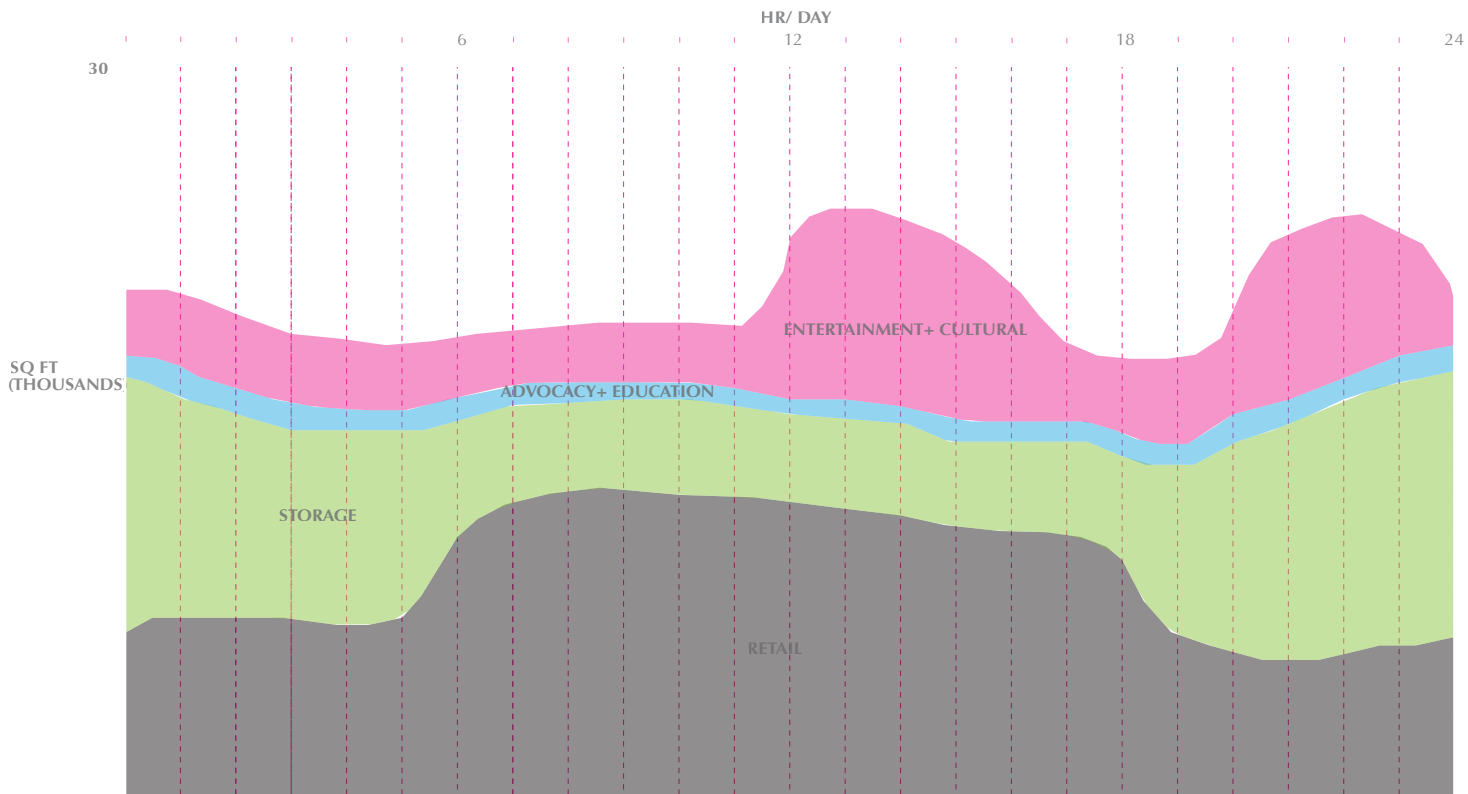
We begin to investigate the processes that occur in different sections of the site. The trend of “interchangeable program” is one that prevails; thus creating an importance in the city’s composition and everyday function.

Although used for different purposes, none of these zones are “dead” at any time of the day.

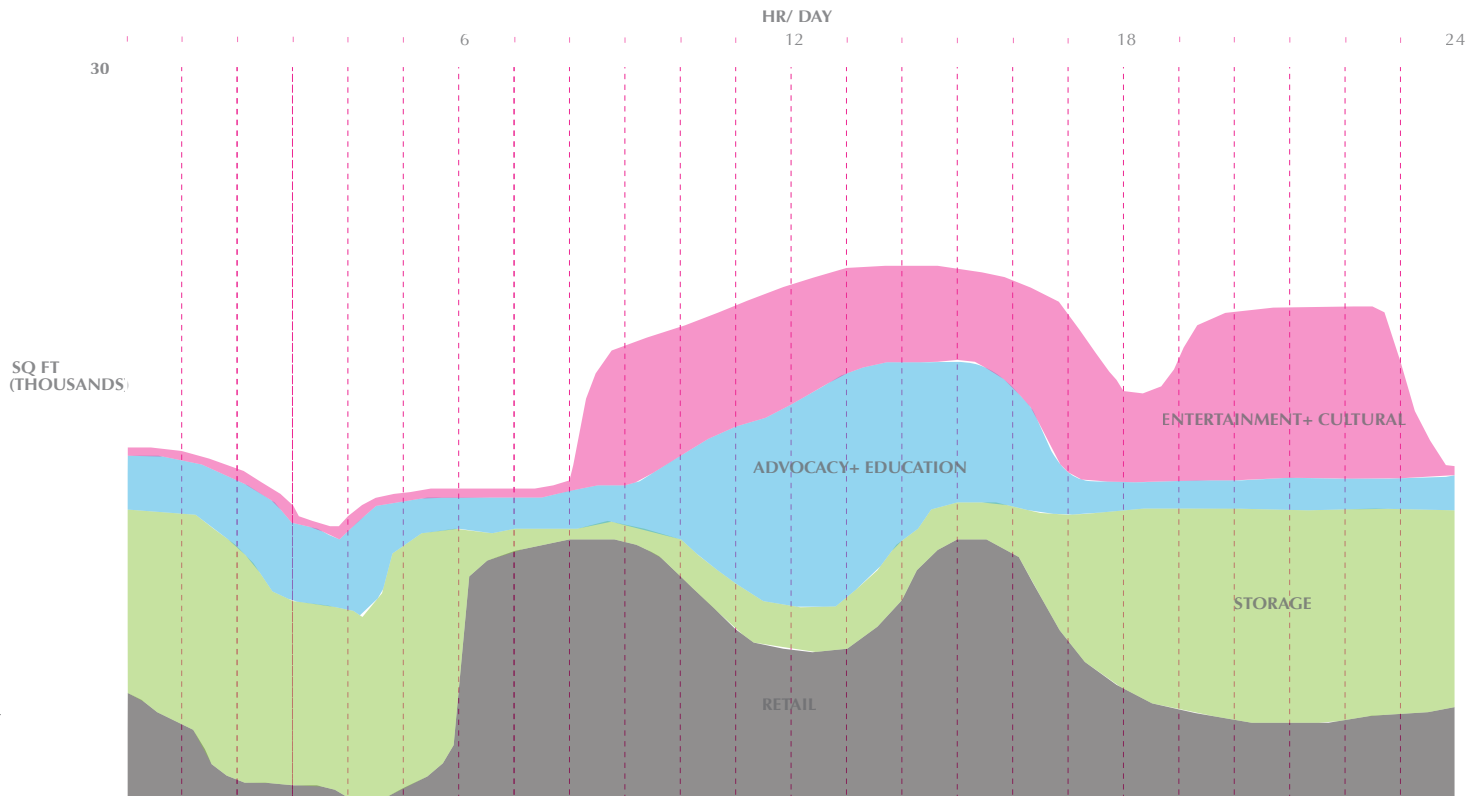


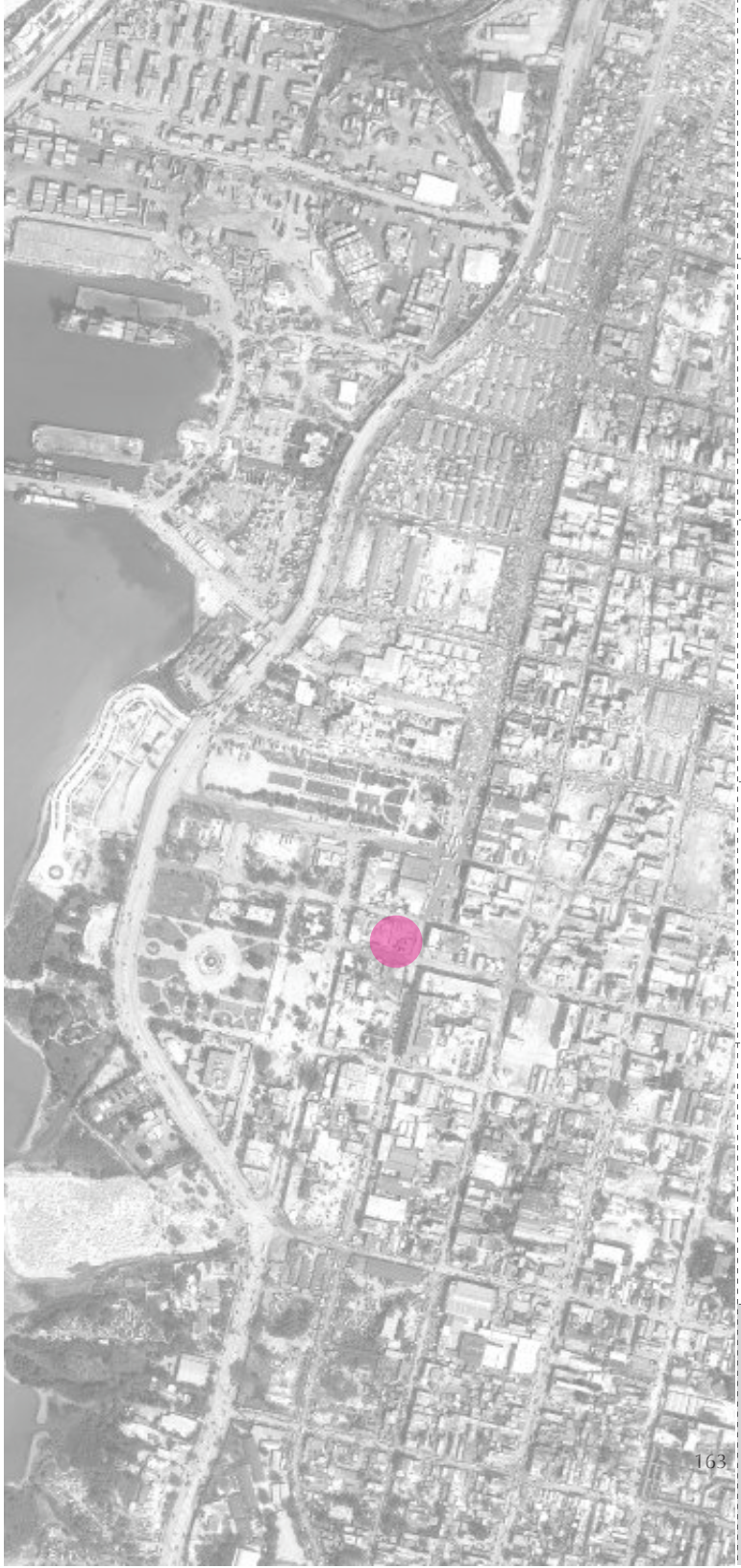


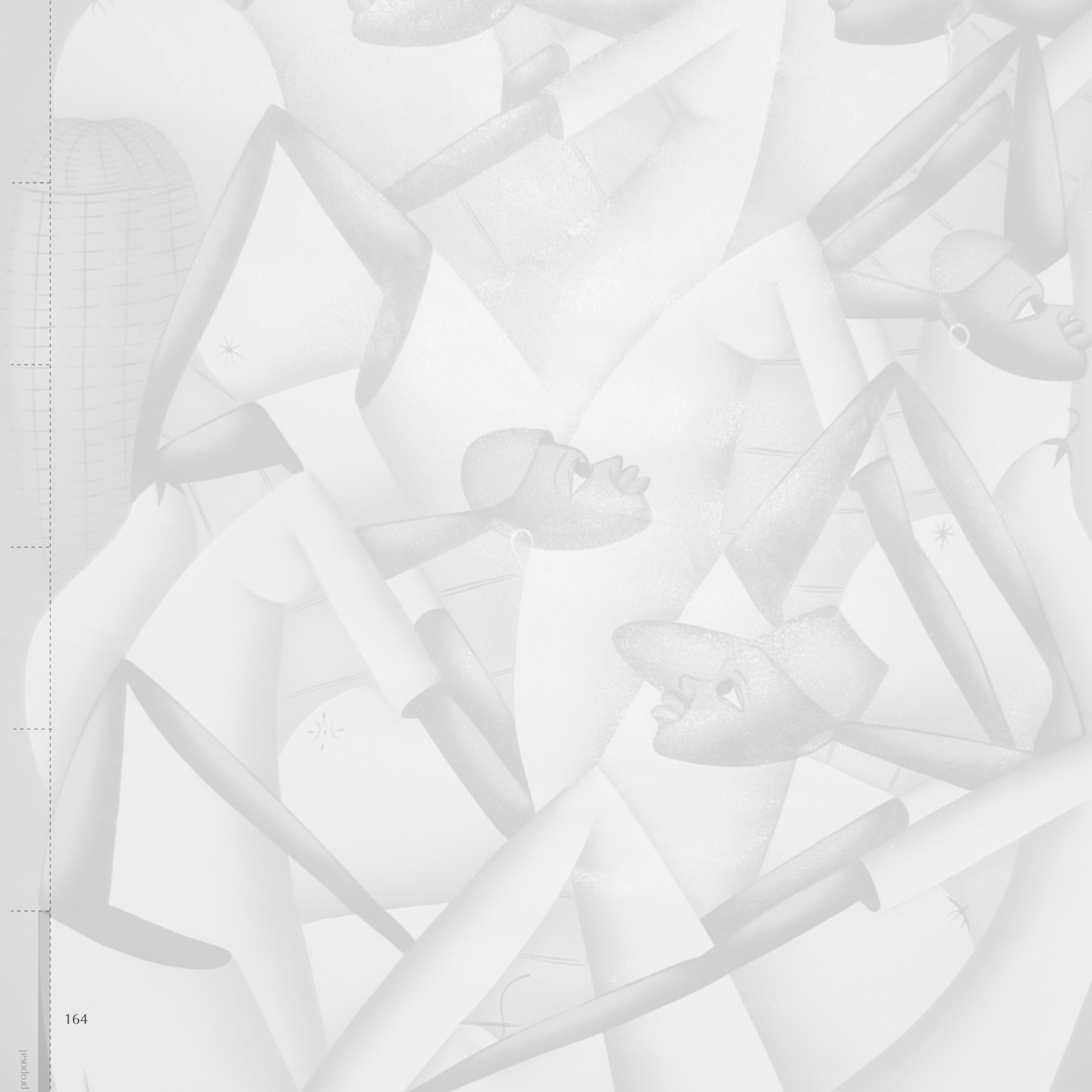








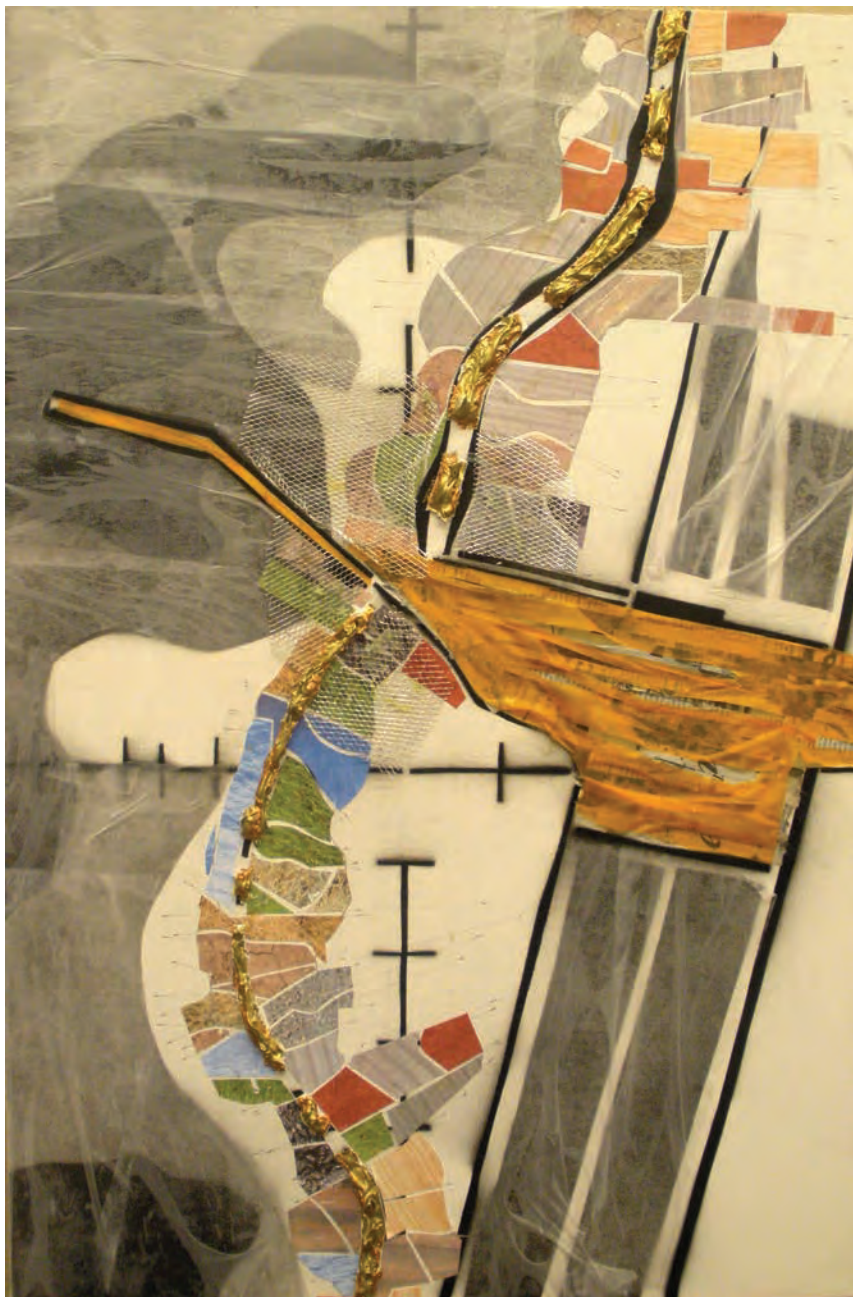






COLLAGE: PRIMARY AXIS _ PROGRAM + CIRCULATION





COLLAGE: SITE MATERIALITY





COLLAGE: PROGRAMMATIC PROPOSAL+ SPATIAL INTERLOCK

Munro, Martin. Haiti Rising: Haitian History, Culture, and the Earthquake of 2010. Liverpool: Liverpool UP, 2009. Print.

The United Nations has reported that 97,000 tents have been distributed since the earthquake. Thousands of people are living under plastic tarps or sheets in concrete parks, in the side streets, behind buildings, in between buildings, on the sides of hills, and by the water. This has become much more widespread subsequent to the earthquake. A large percentage of the Haitian people reside in temporary homes that can barely withstand the rain; therefore these people frequently need to re-construct their homes after heavy rainfall or mud/landslides.

Arthur, Charles. Haiti: a Guide to the People, Politics and Culture. New York: Interlink, 2002. Print.

In 1923, over 60% of the country's land was forested: In 2006, 1.3% of the land was forested. Soil erosion had contributed to a high degree of damaging infrastructure within the country; damaging dams, irrigation systems, roads, and coastal marine ecosystems. This poses a major problem for Haitians being that they rely heavily on wood and charcoal as their primary fuel source, in addition to the necessity of trees and plants for the production of vegetation. It has often been stated that Haiti would not be the poorest country in the western hemisphere if it were not for their deforestation issue.

Girard, Philippe R. Haiti: the Tumultuous History--from Pearl of the Caribbean to Broken Nation. New York: Palgrave Macmillan, 2010. Print.

Haiti's primary source of revenue (as documented from the past) lies in their tourism, exports, coffee production, and production of tropical fruits. Deforestation has accounted for more than 75% of Haiti's revenue decline. Haitians also rely heavily on energy derived from trees; which is why deforestation has reached its all-time high within the past ten years.

"Haiti Earthquake." CNN.com - Breaking News, U.S., World, Weather, Entertainment & Video News. Web. 21 Sept. 2011. <<http://www.cnn.com/SPECIALS/2010/haiti.quake/>>.

The 2010 Haiti Earthquake was a disastrous magnitude of 7.0; with an epicenter in Leogane, located 16.5 miles west of Port-Au-Prince. The earthquake; leaving 317,000 dead, approximately 300,000 injured, and over 1,000,000 homeless directly affected an estimated three million people.

Dubois, Laurent. Haiti: the Aftershocks of History. New York: Henry Holt and, 2012. Print.

What can we learn from natural disasters like earthquakes, and from the quake that devastated Haiti in 2010? A year after the earthquake that devastated Haiti's capital, just 5 percent of the rubble has been removed. The National Palace still sits in a half-demolished pile. But in the main commercial district, a few blocks east of the sea, a huge and beloved 19th-century bazaar called the Marché en Fer, or Iron Market has just been renovated. In the near future, this central zone of commerce — once packed with nearly a thousand merchants selling art, livestock, produce, turtles, dried starfish, herbs, potions, and perfumes will be revived again. "A hive of economic activity, a place where industrious men and women meet, the economic engine for so many families — the Iron Market is as important as a social and community entity as it is a place of trade." Unfortunately, 75% of these vendors are homeless and are forced to sleep alongside the marketplace.

Commerce of Haiti. Washington, D.C.: G.P.O., 1910. Print.

The U.S. Government and municipality of Petion-Ville inaugurated the Marche La Coupe market in Haiti today to increase merchant safety and boost local commerce. The new facility will benefit the community by providing a hub for more than 400 local vendors to sell produce and other goods.

Duhamel, Michel. Haiti: the Need for a Stronger Approach. Carlisle Barracks, PA: U.S. Army War College, 2009. Print

There is a thriving internal market that is characterized at most levels by itinerant female traders who specialize in domestic items such as produce, tobacco, dried fish, used clothing, and livestock. A majority of the merchants in Port Au Prince are female, who work ten hour days; both in the formal and informal Haitian marketplaces. Wikkes, Jason A. "Haiti: Its History." Architecture for Humanity. 2011. Web. 03 Nov. 2011.

<<http://architectureforhumanity.org>>.

Haiti Info. Haiti History, Haiti Culture, Haiti Facts, Haiti Map, Haiti Flag, Haiti Language, Haiti Population, Haiti Compas, Haiti Tourism! Web. 03 Nov. 2011. <<http://haiti.marvelhaiti.com/>>.

Plott, Charles R., and Vernon L. Smith. Handbook of Experimental Economics Results. Amsterdam: North Holland, 2008. Print.



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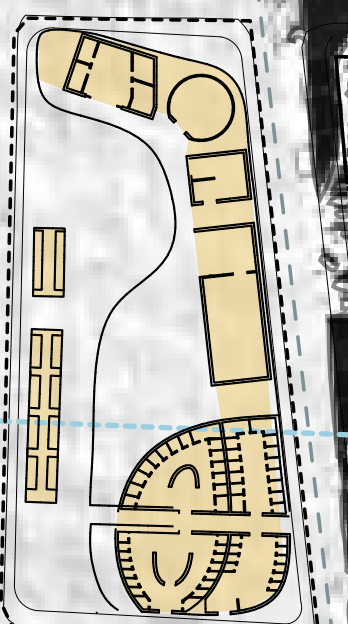
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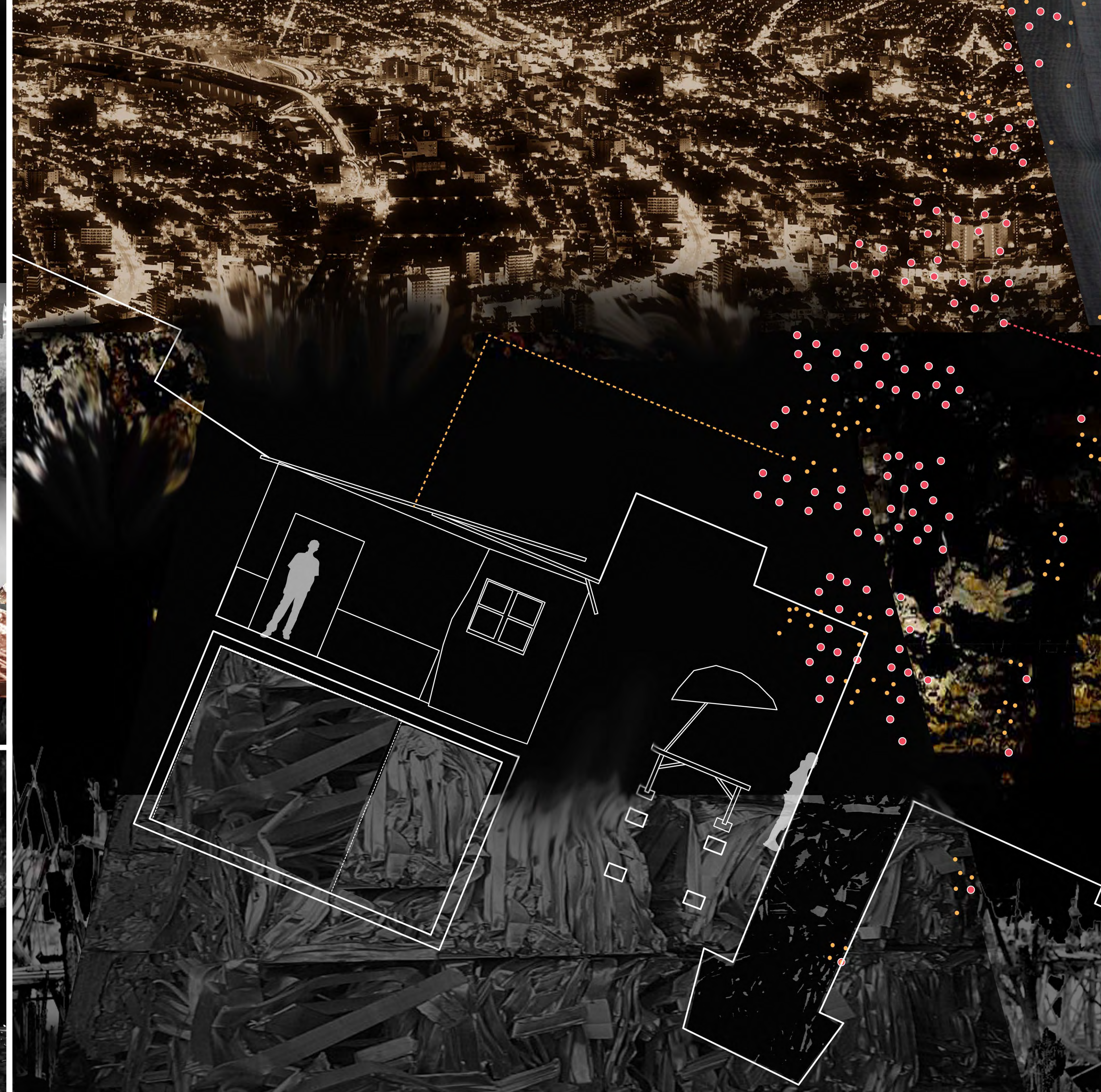
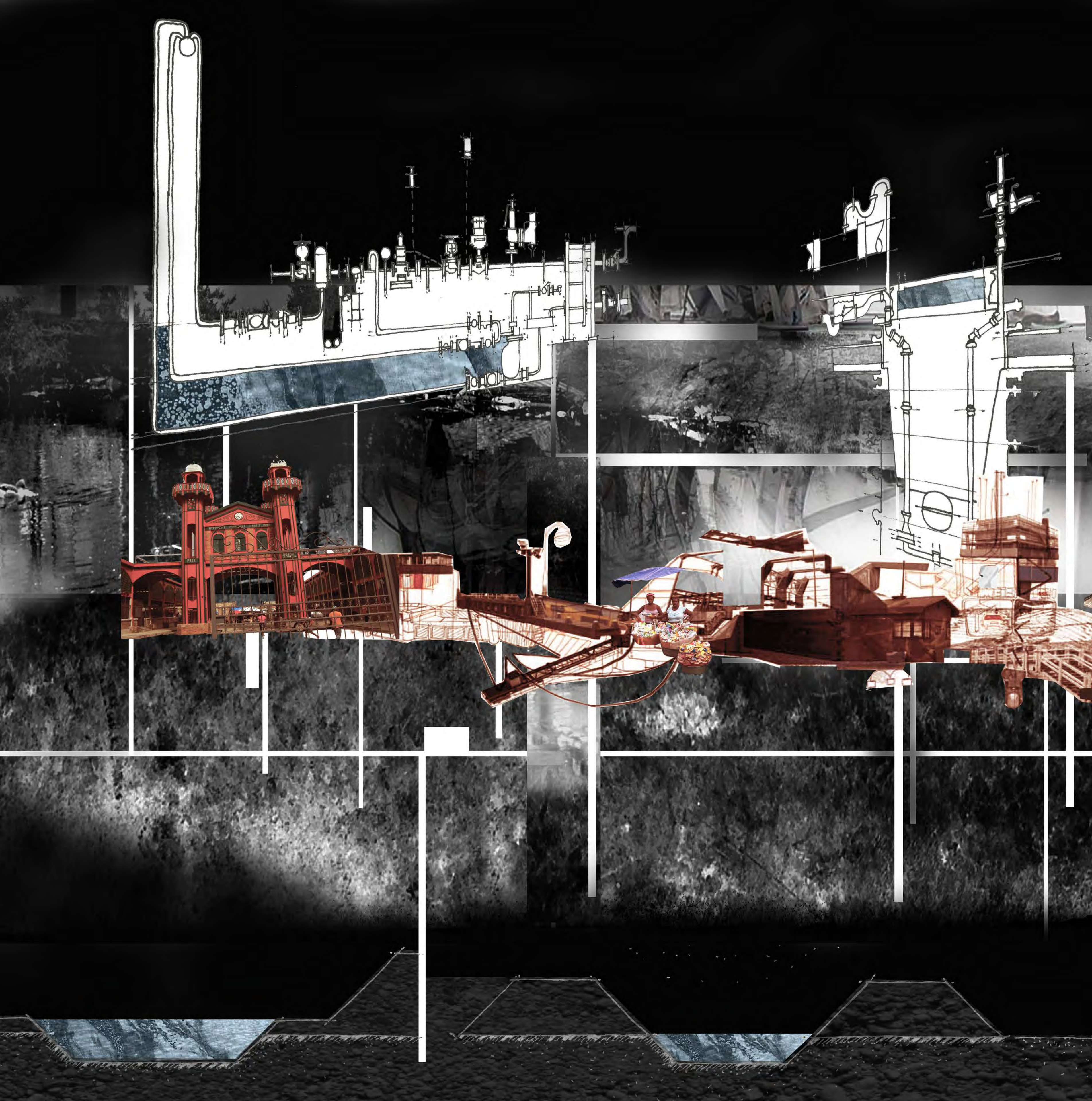
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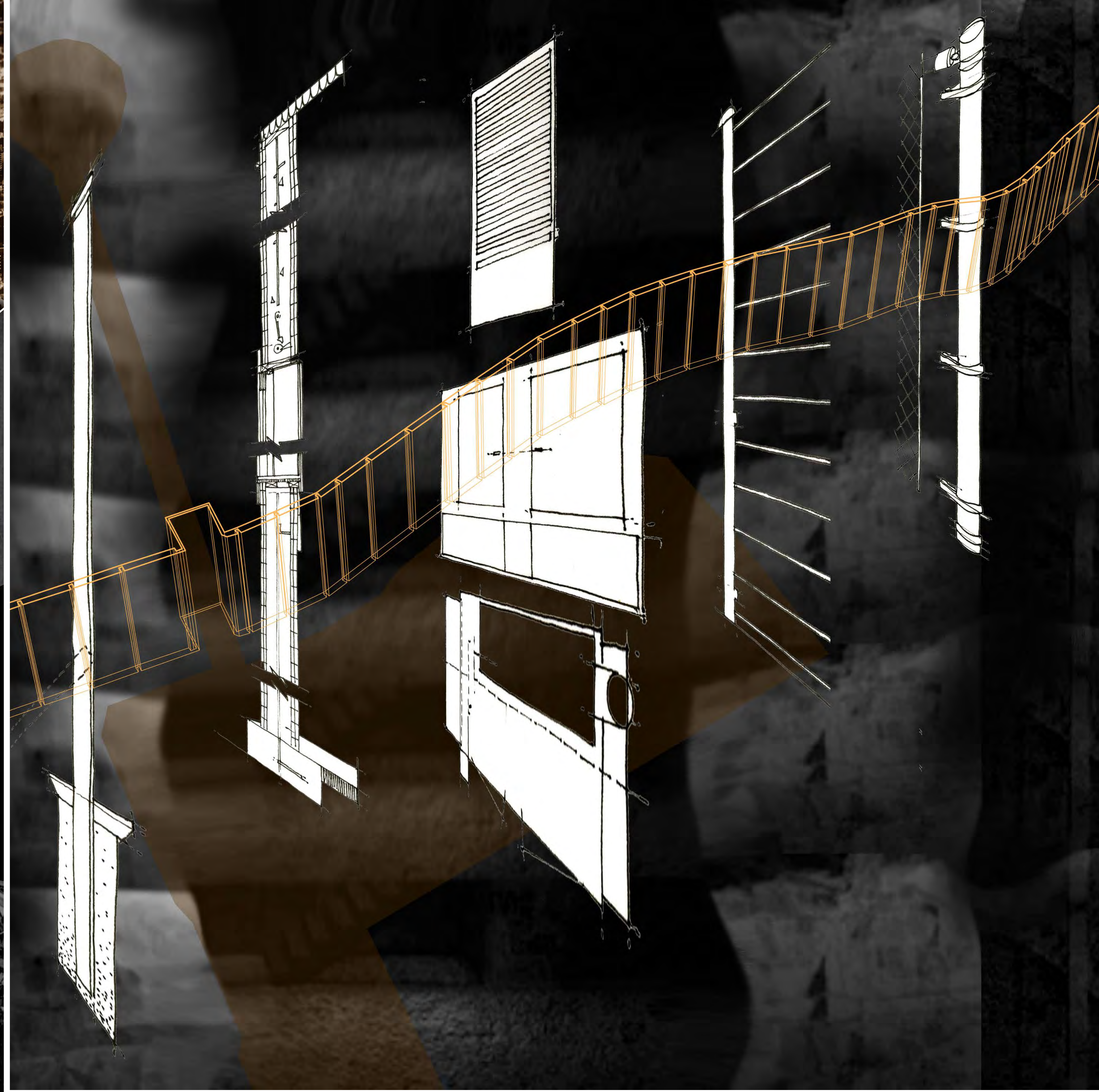
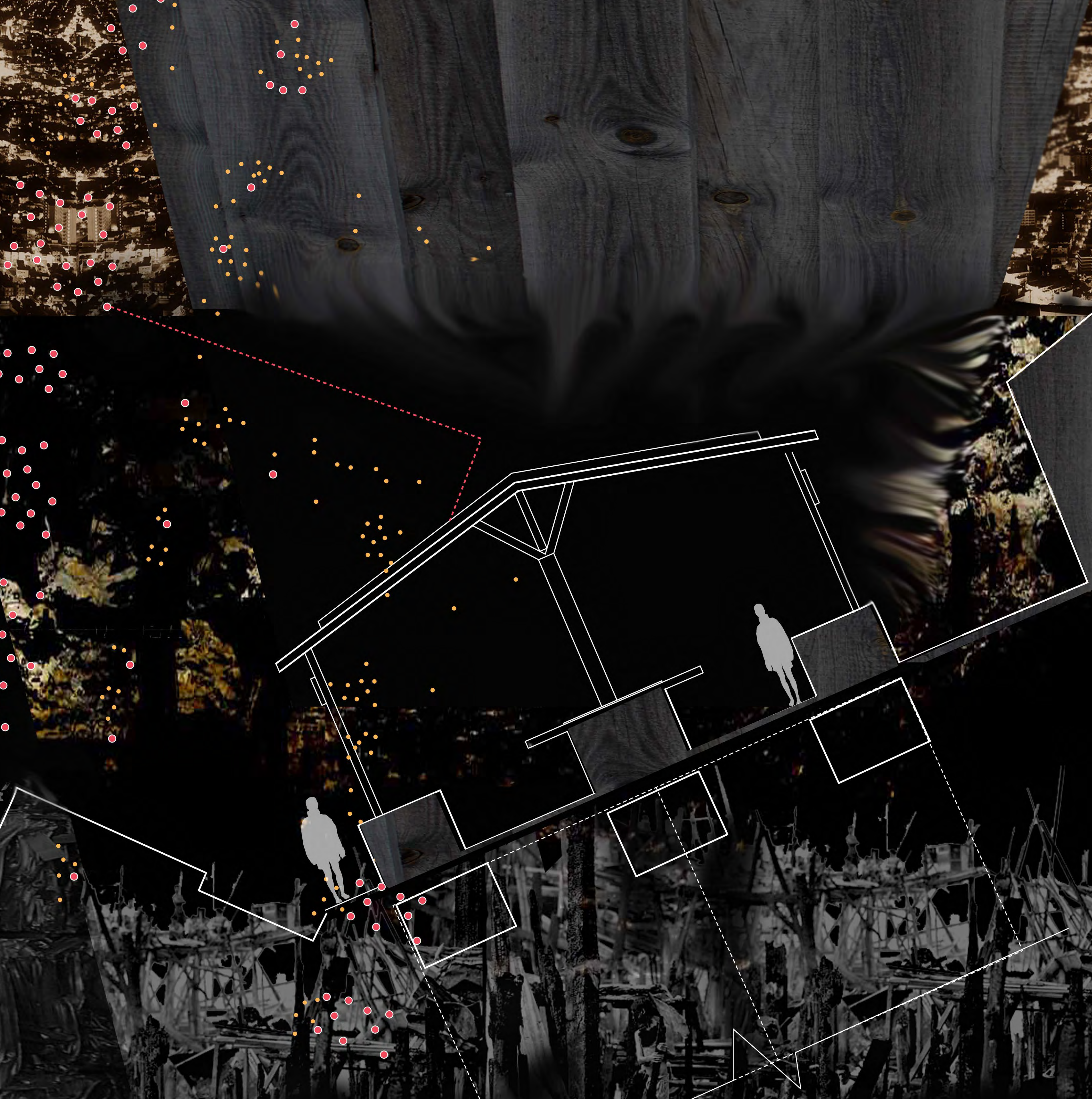
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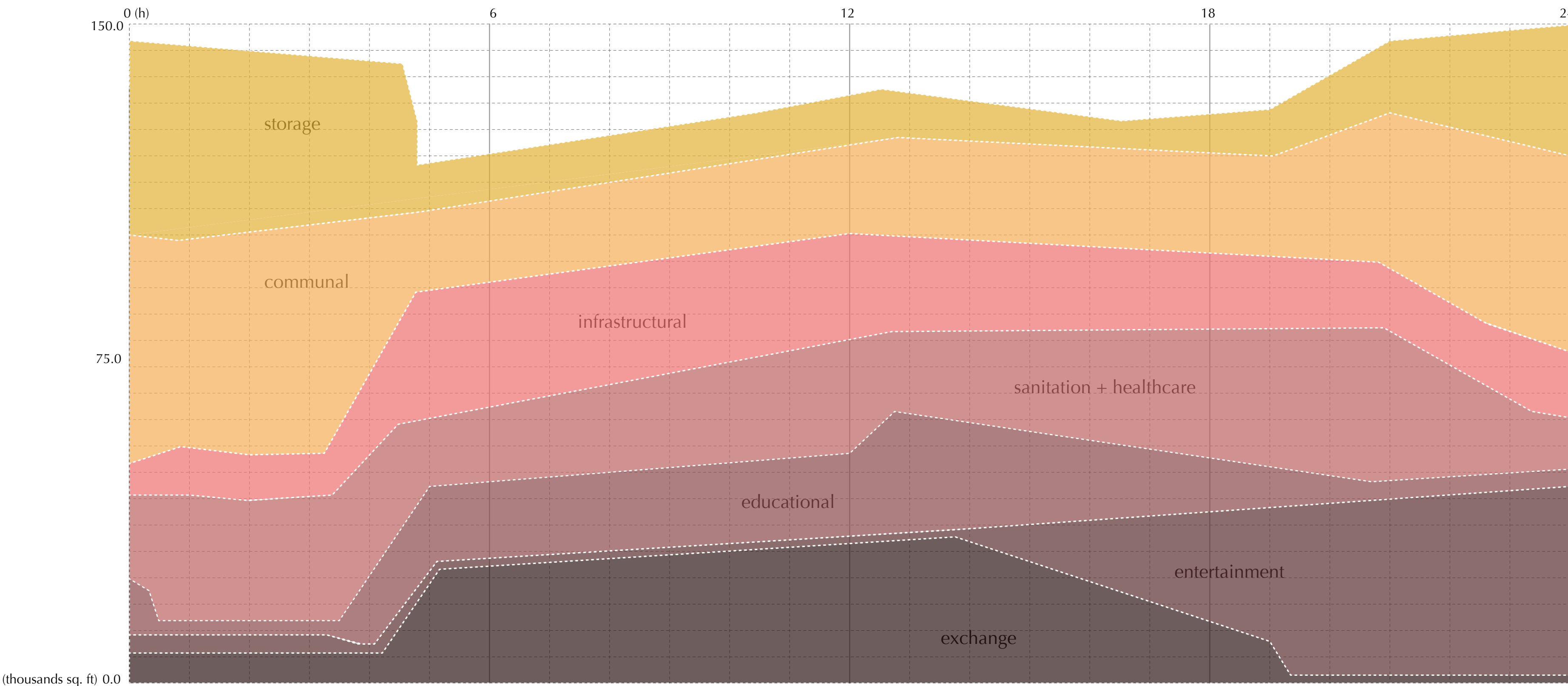
jusqu'à maintenant, mais nous l'avez
efficace, puis la carte



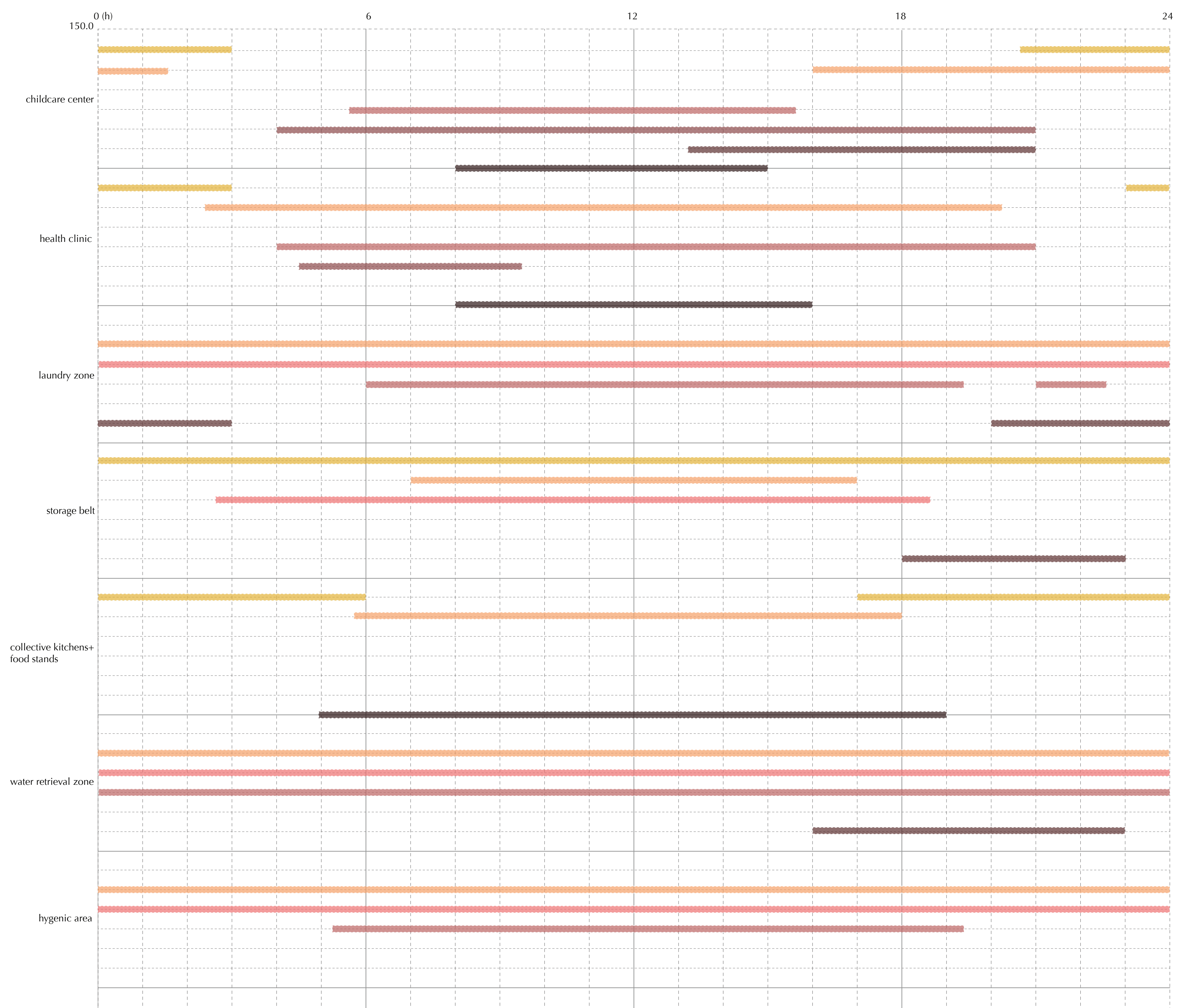
site plan: 1/64" = 1'







dynamic public program





- formal structure
- sites
- informal settlement



port au prince population 2002: 1.9 million
2010: 3.7 million

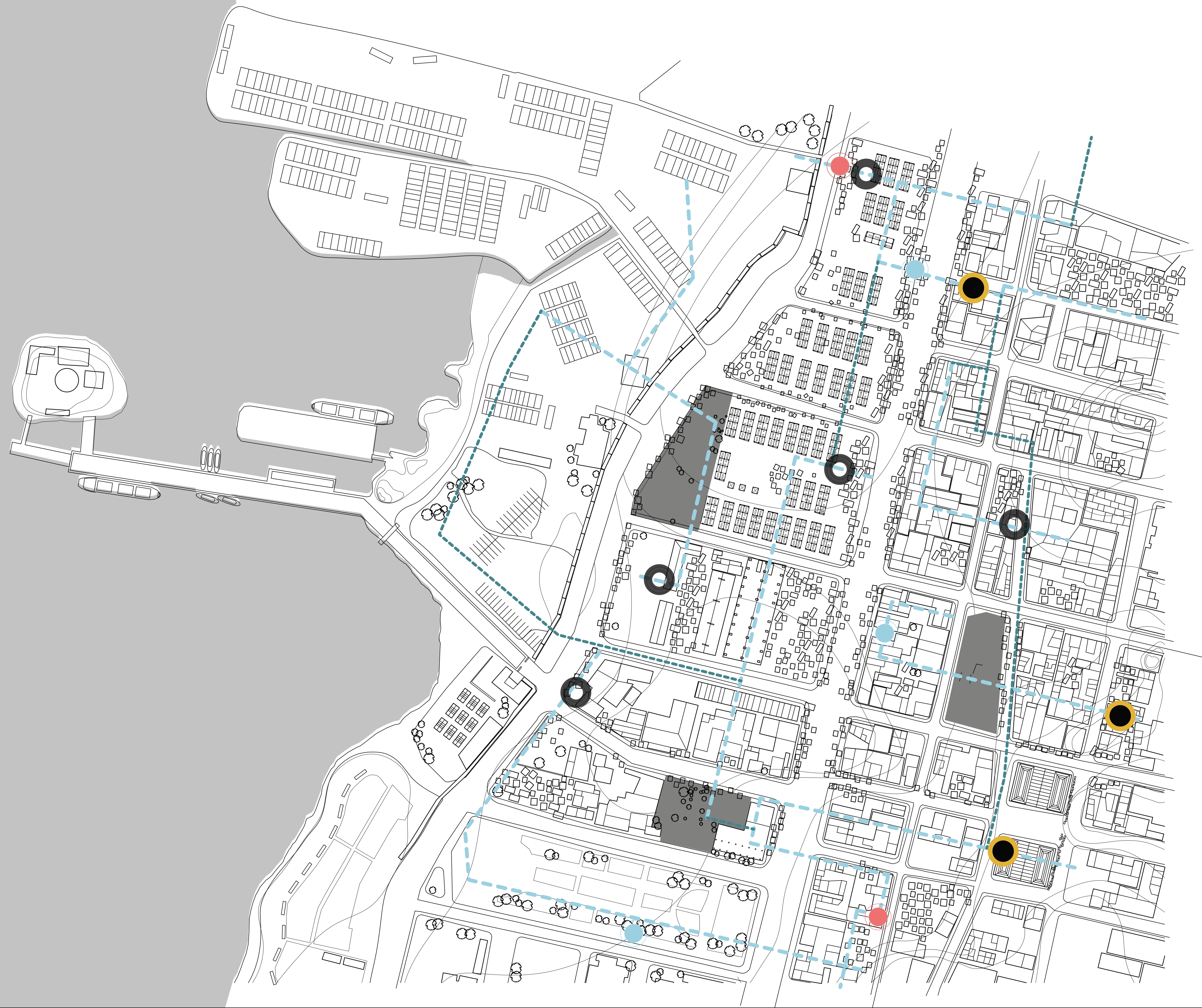
formal vs. informal city







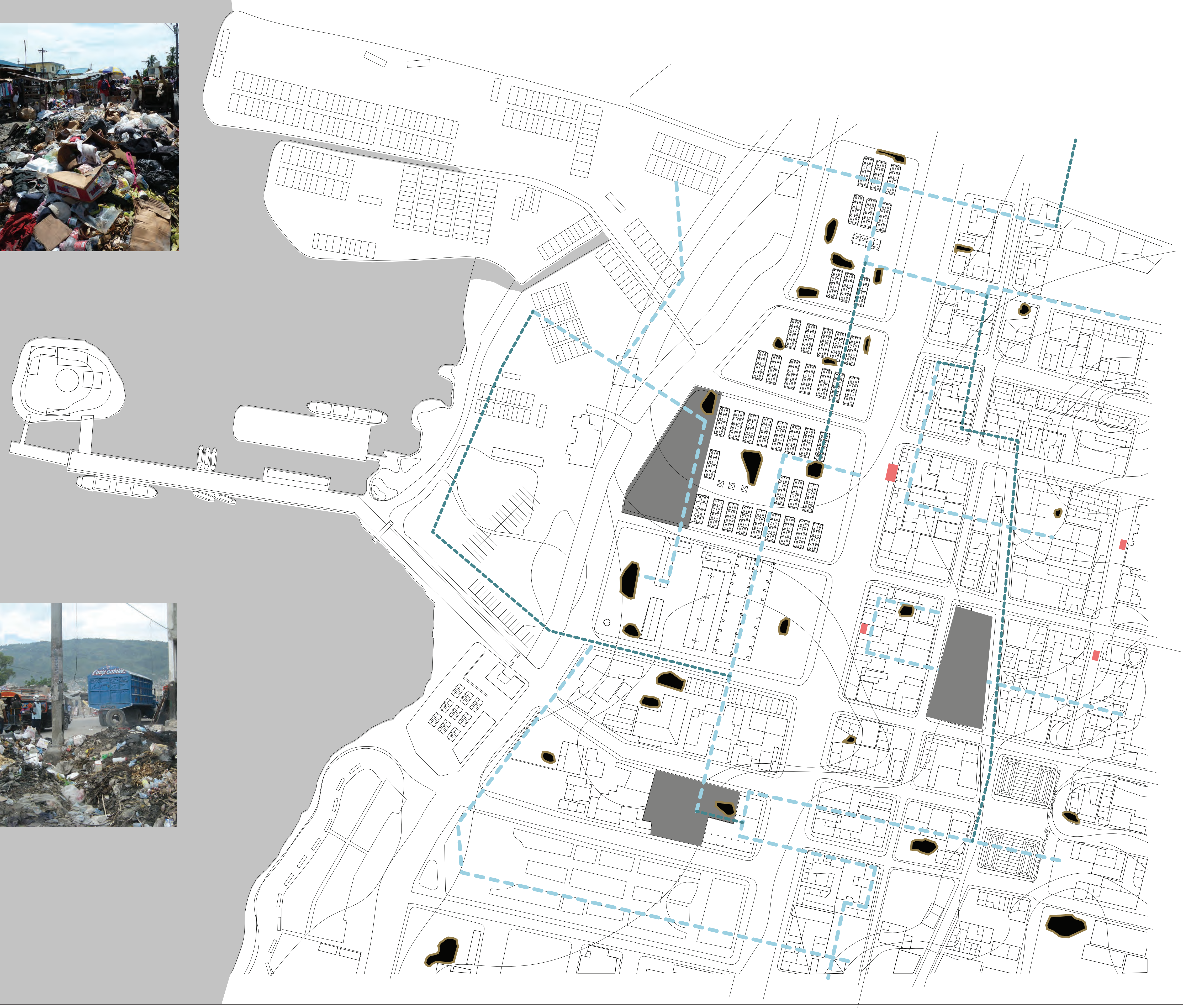
water

- accessible water main line
- operational water tank
- operational water hydrant
- non-accessible water main line
- non-operational water tank
- non-operational water hydrant
- sites





-  accumulated trash pile
-  government regulated trash pick-up site



trash

drinking water	CEN82			Haiti			DHS94			Haiti		
	as recorded on the Global Water Supply and Sanitation Assessment 2000, Water Supply and Sanitation Sector Questionnaire - 1999.			1982			1982			1994		
Generic classification	Original denomination			Urban	Rural	Total	Original denomination			Urban	Rural	Total
Tap water: Piped onto premises	Household connections			28.8	1.8		Private Tap			28.7	1.8	
Tap water: Piped water into dwelling												
Tap water: Piped water to yard/plots												
Tap water: Public tap, standpipe	Public standpipe			21.1	26.5	0.0	Public Standpipe			21.1	26.5	0.0
Tap water: Other	Vendor						Vendor			26.0	0.3	0.0
Wells: Total							Wells: Total					
Wells: Private							Private Well			4.1	2.9	
Wells: Public							Public Well			5.5	6.9	
Tubewell, borehole: Total												
Protected well: Total												
Protected well: Private	Protected private well			4.1	2.9	0.0						
Protected well: Public												
Unprotected well: Total												
Unprotected well: Private												
Unprotected well: Public												
Spring: Total							Spring			3.5	51.6	
Protected spring: Total	Protected spring			5.0	0.7							
Unprotected spring: Total												
Rainwater: Covered cistern/tank	Rainwater collection			6.1	1.3	0.0						
Bottled water: with other improved												
Bottled water: without other improved												
Surface water: Total							River/Lake			2.0	8.7	
River												
Pond												
Cart with small tank/drum												
Tanker truck provided	Cistern truck tanker			3.1	0.0	0.0	Tanker			3.1	0.0	0.0
Other non-improved: Other							Other			6.1	1.3	0.0
Other non-improved: Other												
DK/missing	Not specified			31.7	66.8	0.0						
Total	Total			100.0	100.0		Total			100.1	100.0	
Calculations												
Estimations							Protected wells based on ratio DHS00			4.9	5.3	
							Protected springs based on ration DHS00			1.2	12.8	
Surface water							Surface water			2.0	8.7	
Improved water sources :	65%	33%		Improved water sources :			82%	47%				
Piped onto premises :	29%	2%		Piped onto premises :			29%	2%				
Selections	Improved water sources :			No	No		Improved water sources :			Yes	Yes	
	Piped onto premises :			No	No		Piped onto premises :			Yes	Yes	
	Surface water :			No	No		Surface water :			Yes	Yes	
Ratios	HC / Tap water			58%	6%		HC / Tap water			38%	6%	
	Public tap / Tap water			42%	94%		Public tap / Tap water			28%	93%	
							ratio public standpipe/public standpipe + vendor			100%	100%	
Statistics	Sample (individuals):						Sample (individuals):					
	Sample (households):						Sample (households):					
	Total population (thousands):			1'227	4'737	5'964	Total population (thousands):			2'471	5'258	7'729

drinking water		Haiti				Haiti				Haiti				
	Demographic and Health Survey				Encuesta de Condiciones de Vida				Demographic and Health Survey					
	Enquête Mortalité, Morbidité, et Utilisation des Services	2000				Living Conditions Survey	2001				Enquête Mortalité, Morbidité, et Utilisation des Services	2006		
Generic classification	Original denomination	Urban	Rural	Total	Original denomination	Urban	Rural	Total	Original denomination	Urban	Rural	Total		
Tap water: Piped onto premises	Robinet dans logement/cour	22.4	3.8											
Tap water: Piped water into dwelling					Robinet dans le logement	4.2	0.4	2.0	Robinet dans logement	4.7	0.5	0.0		
Tap water: Piped water to yard/plots					Robinet dans la cour	8.7	2.6	5.1	Robinet dans la cour	16.2	2.9	0.0		
Tap water: Public tap, standpipe	Fontaine publique/robinet au voisin/eau au robinet acheté	60.0	32.2	0.0	Fontaine publique	17.1	22.8	20.5	Robinet public	31.4	22.8	0.0		
Tap water: Other					Achete de seaux d'eau	39.1	5.3	19.0						
Wells: Total					*Puits dans la cour*+*Puits dans le voisinage*	8.3	11.2	10.0						
Wells: Private														
Wells: Public														
Tubewell, borehole: Total									Puits a pompe our forage	8.6	5.2			
Protected well: Total									Puits protégés	6.8	5.0			
Protected well: Private	Puits protégé dans la cour	1.4	3.0	0.0										
Protected well: Public	Puits protégé public	2.9	3.3	0.0										
Unprotected well: Total									Puits non protégés	2.7	5.2			
Unprotected well: Private	Puits ouvert dans la cour	1.4	0.9	0.0										
Unprotected well: Public	Puits ouvert public	2.8	4.5	0.0										
Spring: Total														
Protected spring: Total	Source protégée	0.7	10.2						Eau de source protégée	0.7	7.1			
Unprotected spring: Total	Source non protégée	1.4	31.0						Eau de source non protégée	3.3	37.2			
Rainwater: Covered cistern/tank	Eau de pluie	0.3	2.2	0.0	Récupération d'eau de pluie	0.4	3.1	2.0	Eau de pluie	1.0	2.8	0.0		
Bottled water: with other improve					Achat d'eau traitée	6.6	0.4	2.9	Eau en bouteille/societe de vente d'eau avec otre	13.3	2.1	0.0		
Bottled water: without other improve	Eau en bouteille	2.1	0.1	0.0					Eau en bouteille/societe de vente d'eau sans otre	6.5	1.3	0.0		
Surface water: Total					Source ou rivière	11.7	50.3	34.7	Eau de surface (riviere, barrage, lac, mare, fleuve	0.5	7.5			
River	Fleuve, rivière	0.3	5.1	0.0										
Pond	Canal/Lac/Mare	0.5	3.7	0.0										
Cart with small tank/drum	Vendeur d'eau	2.6	0.0	0.0	Achat de camion d'eau	0.5	0.1	0.2	Camion citerne/petit vendeur d'eau a charrette	4.2	0.5	0.0		
Tanker truck provided	Camion citerne	1.1	0.0	0.0										
Other non-improved: Other														
Other non-improved: Other					Autres	1.5	1.9	1.7						
DK/missing					NR	0.0	0.1	0.0						
Total	Total	99.9	100.0		Total	98.1	98.2	98.1	Total	99.9	100.1			
Calculations					surface water	3.2	8.9							
					springs in source ou riviere, based on DHS00	8.5	41.5							
Estimations					improved springs based on DHS00	2.8	10.3							
					wells considered improved based on DHS00	4.2	6.0							
	Estimated standpipe based on DHS94	2.6	0.0											
	Surface water	0.8	8.8		Surface water	11.7	50.3	34.7	Surface water	0.5	7.5			
	Improved water sources :	90%	55%		Improved water sources :	83%	51%	51%	Improved water sources :	83%	48%			
	Piped onto premises :	22%	4%		Piped onto premises :	13%	3%	7%	Piped onto premises :	21%	3%			
Selections	Improved water sources :	Yes	Yes		Improved water sources :	Yes	Yes		Improved water sources :	Yes	Yes			
	Piped onto premises :	Yes	Yes		Piped onto premises :	Yes	Yes		Piped onto premises :	Yes	Yes			
	Surface water :	Yes	Yes		Surface water :	Yes	Yes		Surface water :	Yes	Yes			
Ratio	HC / Tap water	27%	11%		HC / Tap water	19%	10%		HC / Tap water	40%	13%			
	Public tap / Tap water	73%	89%		Public tap / Tap water	25%	73%		Public tap / Tap water	60%	87%			
									Tubewell + protected well / All wells	85%	66%			
	Protected wells / Traditional wells	51%	54%						Protected wells / Traditional wells	72%	49%			
									Tubewell / All wells	48%	34%			
	Protected springs / All springs	33%	25%						Protected springs / All springs	18%	16%			
	Protect. well & spring / well & spring	47%	31%						Protect. well & spring / well & spring	73%	29%			
									Ratio public standpipe/public standpipe + hand-dug	88%	98%			
	springs/springs and surface water	72%	82%											
Statistics	Sample (individuals):				Sample (individuals):				Sample (individuals):					
	Sample (households):				Sample (households):				Sample (households):					
	Total population (thousands):	3'078	5'568	8'645	Total population (thousands):	3'275	5'517	8'792	Total population (thousands):	4'338	5'137	9'475		

sanitation	CEN82	Haiti			DHS94	Haiti		
	National Census				Demographic and Health Survey			
	as recorded on the Globar Water Supply and Sanitation Assessment 2000. Water Supply and Sanitation Sector Questionnaire - 1999	1982				1994		
	Original denomination	Urban	Rural	Total	Original denomination	Urban	Rural	Total
Generic classification								
Flush toilet + pour flush latrine: To piped sewer system								
Flush toilet: Total					WC	11.5	0.0	
Flush toilet: To piped sewer system								
Flush toilet: To septic tank								
Flush toilet: To pit								
Flush toilet: Private - Total								
Flush toilet: Private - To piped sewer system	Private sewerage connection	0.0	0.0	0.0				
Flush toilet: Private - To septic tank	Private septic tank	11.0	0.0	0.0				
Flush toilet: Public/shared - Total								
Latrine: Dry: Improved - Ventilated Improved Pit latrine								
Latrine: Dry: Improved - Pit latrine with slab/covered latrine								
Latrine: Dry: Unimproved - Pit latrine without slab/open pit					Simple Latrine	5.1	11.6	
Latrine: Dry: Unimproved - Hanging toilet/hanging latrine								
Latrine: Dry: Unimproved - Bucket latrine								
Latrine: Dry: Improved: Pit latrine with slab/covered latrine - Private					Private Improved Latrine	27.3	16.9	0.0
Latrine: Dry: Unimproved: Traditional latrine - Private								
Latrine: Dry: Unimproved: Pit latrine without slab/open pit - Private								
Latrine: Dry: Improved: Pit latrine with slab/covered latrine - Public/shared					Shared Improved Latrine	43.0	11.1	0.0
Latrine: Dry: Unimproved: Traditional latrine - Public/shared	Shared latrines	34.3	12.0	0.0				
Latrine: Dry: Unimproved: Pit latrine without slab/open pit - Public/shared								
Composting toilet: Total								
No facility, bush, field					No Facilities	12.6	60.0	0.0
Other unimproved: Other 1					Other	0.6	0.3	0.0
Other unimproved: Other 2								
DK/missing information	Not specified	54.7	88.0	0.0				
Total	Total	100.0	100.0		Total	100.1	99.9	
Calculations								
Estimations	50% of traditional latrines considered improved	17.1	6.0					
					SC, based on DHS06	2.4	0.0	
	Improved + shared improved :	28%	6%		Improved + shared improved :	82%	28%	
	Sewerage connections :	0%	0%		Sewerage connections :	2%	0%	
Selections	Improved + shared improved sanitation :	No	No		Improved + shared improved sanitation :	Yes	Yes	
	Sewerage connections :	No	No		Sewerage connections :	Yes	Yes	
	Open defecation :	No	No		Open defecation :	Yes	Yes	
	Shared facilities :	No	No		Shared facilities :	No	No	
Ratios								
					Improved latrine / All latrines	93%	71%	
					Covered dry latrines / All dry latrines	93%	71%	
	Traditional latrines / All latrines	100%	100%					
	Sewerage connection among flush/pour flush	0.0						
	Sewerage connection among flush	0.0						
Statistics	Sample (individuals):				Sample (individuals):			
	Sample (households):				Sample (households):			
	Total population (thousands):	1'227	4'737	5'964	Total population (thousands):	2'471	5'258	7'729

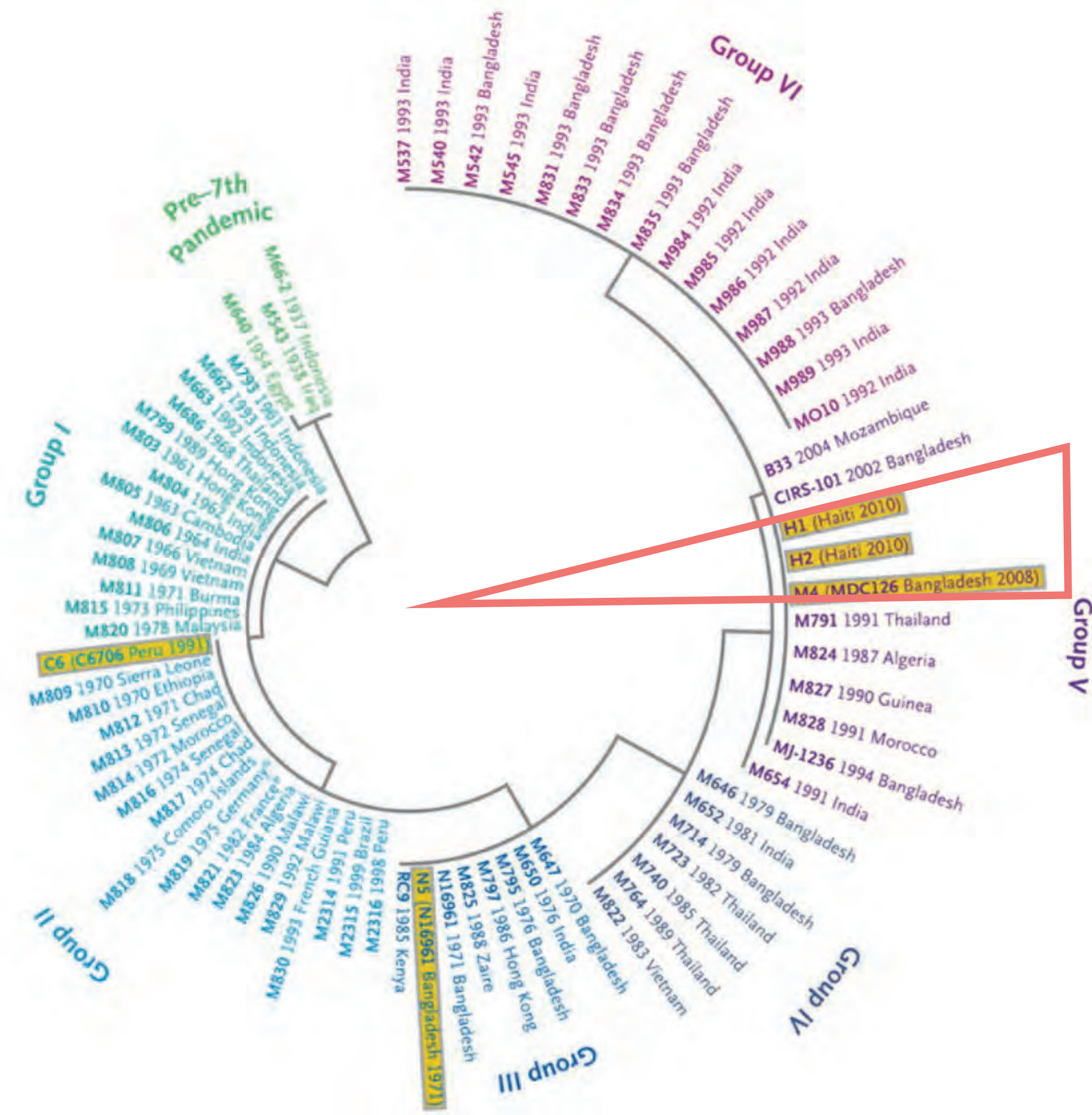
71 % downtown port au prince
defecate in the open

sanitation

sanitation	DHS00	Haiti			ECV01	Haiti			DHS06	Haiti		
	Demographic and Health Survey				Encuesta de Condiciones de Vida				Demographic and Health Survey			
	Enquête Mortalité, Morbidité, et Utilisation des Services	2000			Living Conditions Survey	2001			Enquête Mortalité, Morbidité, et Utilisation des Services	2006		
	Original denomination	Urban	Rural	Total	Original denomination	Urban	Rural	Total	Original denomination	Urban	Rural	Total
Generic classification												
Flush toilet + pour flush latrine: To piped sewer system					WC	8.5	0.5	3.7				
Flush toilet: Total												
Flush toilet: To piped sewer system									Chasse d'eau connectee a un system d'egout	3.0	0.4	
Flush toilet: To septic tank									Chasse d'eau connectee a une fosse septique	8.7	1.2	
Flush toilet: To pit									Chasse d'eau connectee a des latrines	2.6	1.5	
Flush toilet: Private - Total	WC privé	1.0	0.0									
Flush toilet: Private - To piped sewer system												
Flush toilet: Private - To septic tank												
Flush toilet: Public/shared - Total	WC en commun	7.9	0.3									
Latrine: Dry: Improved - Ventilated Improved Pit latrin									Latrines ventilees ameliorées	8.0	2.7	
Latrine: Dry: Improved - Pit latrine with slab/covered latrin									Latrines avec dalles	28.2	11.2	
Latrine: Dry: Unimproved - Pit latrine without slab/open p									Latrines sans dalles/latrine (ouvertes)	21.7	20.6	
Latrine: Dry: Unimproved - Hanging toilet/hanging latrin									Toilette de tenture (sur pilots) latrines	17.6	11.7	
Latrine: Dry: Unimproved - Bucket latrine									Seau	0.0	0.0	
Latrine: Dry: Improved: Pit latrine with slab/covered latrine - Privat	Latrines améliorées privées	43.6	11.6	0.0								
Latrine: Dry: Unimproved: Traditional latrine - Privat					Lieu d'aisance pour résidents seulement	21.3	15.4	17.8				
Latrine: Dry: Unimproved: Pit latrine without slab/open pit - Privat	Fosses/latrines rudimentaires privées	12.2	8.5	0.0								
Latrine: Dry: Improved: Pit latrine with slab/covered latrine - Public/share	Latrines améliorées en commun	22.2	14.0	0.0								
Latrine: Dry: Unimproved: Traditional latrine - Public/share					Lieu d'aisance pour voisinage aussi	27.0	7.3	15.3				
Latrine: Dry: Unimproved: Pit latrine without slab/open pit - Public/share	Fosses/latrines rudimentaires en commun	3.2	9.6	0.0								
Composting toilet: Total									Toilet avec compost	0.2	0.1	
No facility, bush, field	Pas de toilettes/nature	9.9	55.9	0.0					Pas de toilettes/nature	9.9	50.6	0.0
Other unimproved: Other 1					Trou dans la cour	20.0	16.4	17.9	Autre	0.1	0.0	0.0
Other unimproved: Other 2					Autres	1.0	0.8	0.9				
DK/missing information					NR	22.3	59.5	44.5				
Total	Total	100.0	99.9		Total	100.0	100.0	100.0	Total	99.9	99.9	
Calculations												
Estimations					Improved latrines based on DHS01	39.1	13.3					
	SC, based on DHS06	1.9	0.0									
	Improved + shared improved :	75%	26%		Improved + shared improved :	48%	14%	4%	Improved + shared improved :	51%	17%	
	Sewerage connections :	2%	0%		Sewerage connections :	8%	0%	4%	Sewerage connections :	3%	0%	
Selections	Improved + shared improved sanitation :	Yes	Yes		Improved + shared improved sanitation :	No	No		Improved + shared improved sanitation :	Yes	Yes	
	Sewerage connections :	Yes	Yes		Sewerage connections :	No	No		Sewerage connections :	Yes	Yes	
	Open defecation :	Yes	Yes		Open defecation :	No	No		Open defecation :	Yes	Yes	
	Shared facilities :	Yes	Yes		Shared facilities :	No	No		Shared facilities :	Yes	Yes	
Ratios	Shared improved facilities/all improved facilities	56.0%	41.8%						Shared improved facilities/all improved facilities	45.3%	34.0%	
	Improved latrine / All latrines	81%	59%						Improved latrine / All latrines	48%	30%	
	Covered dry latrines / All dry latrines	81%	59%						Covered dry latrines / All dry latrines	37%	24%	
									VIP / All latrines	11%	6%	
					Traditional latrines / All latrines	100%	100%	100%				
					Sewerage connection among flush/pour flush	100.0	100.0		Sewerage connection among flush/pour flush	20.8	11.8	
					Sewerage connection among flush				Sewerage connection among flush	20.8	11.8	
Statistics	Sample (individuals):				Sample (individuals):				Sample (individuals):			
	Sample (households):				Sample (households):				Sample (households):			
	Total population (thousands):	3'078	5'568	8'645	Total population (thousands):	3'275	5'517	8'792	Total population (thousands):	4'338	5'137	9'475

Improved sanitation facilities facilities are defined in terms of the types of technology and levels of services that are more likely to be sanitary than unimproved technologies. Improved sanitation includes connection to a public sewers, connection to septic systems, pour-flush latrines, simple pit latrines and ventilated improved pit latrines.

Not considered as improved sanitation are service or bucket latrines (where excreta is manually removed), public latrines and open latrines.



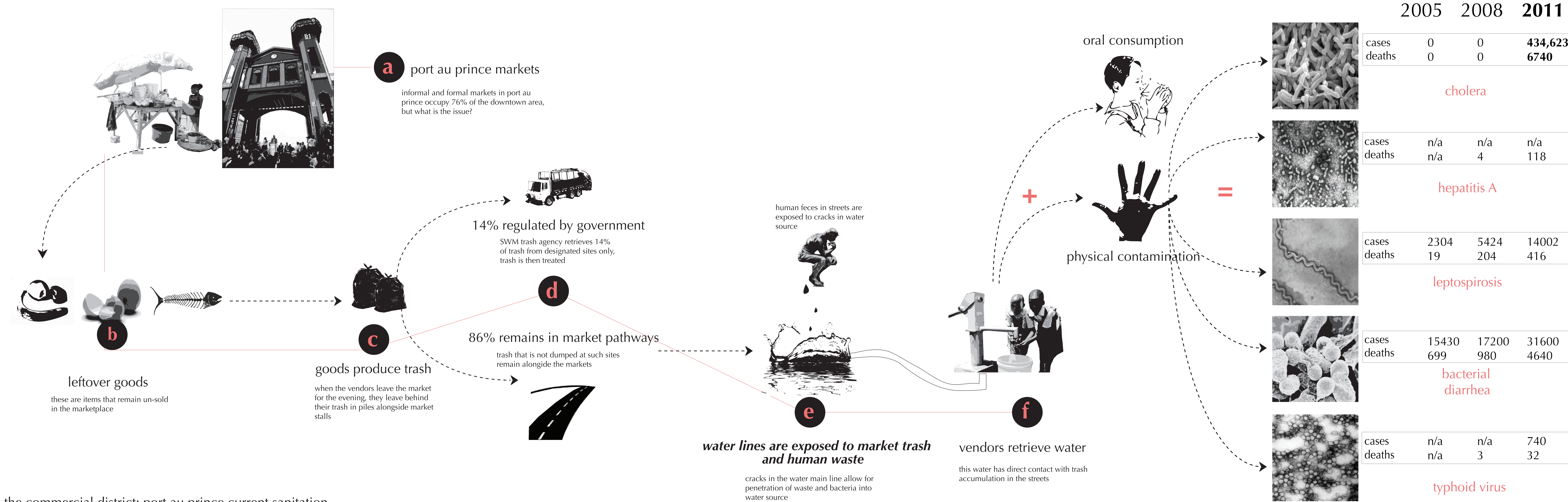
a new study has yielded the most solid evidence that U.N peace-keeping forces from Nepal inadvertently brought cholera to haiti last year. this set off an epidemic that has killed almost 7000 people thus far. the above chart compares the whole genomes of bacteria from haitian cholera patients with those found in nepal around the time in 2010 when the peacekeepers left their country. the genomes from the two sets of bacteria are virtually identical.

this is the first cholera outbreak in haiti in at least 150 years. although a completely treatable disease, this outbreak is of particular concern given the current conditions in haiti, including poor water and sanitation; a severely strained public health infrastructure.

although cholera is the most severe disease growth because of unsanitary water conditions, water-borne illnesses such as hepatitis a, leptospirosis, bacterial diarrhea, and typhoid virus have yielded rapid death rates post the earthquake of 2010.

cholera and water-borne diseases





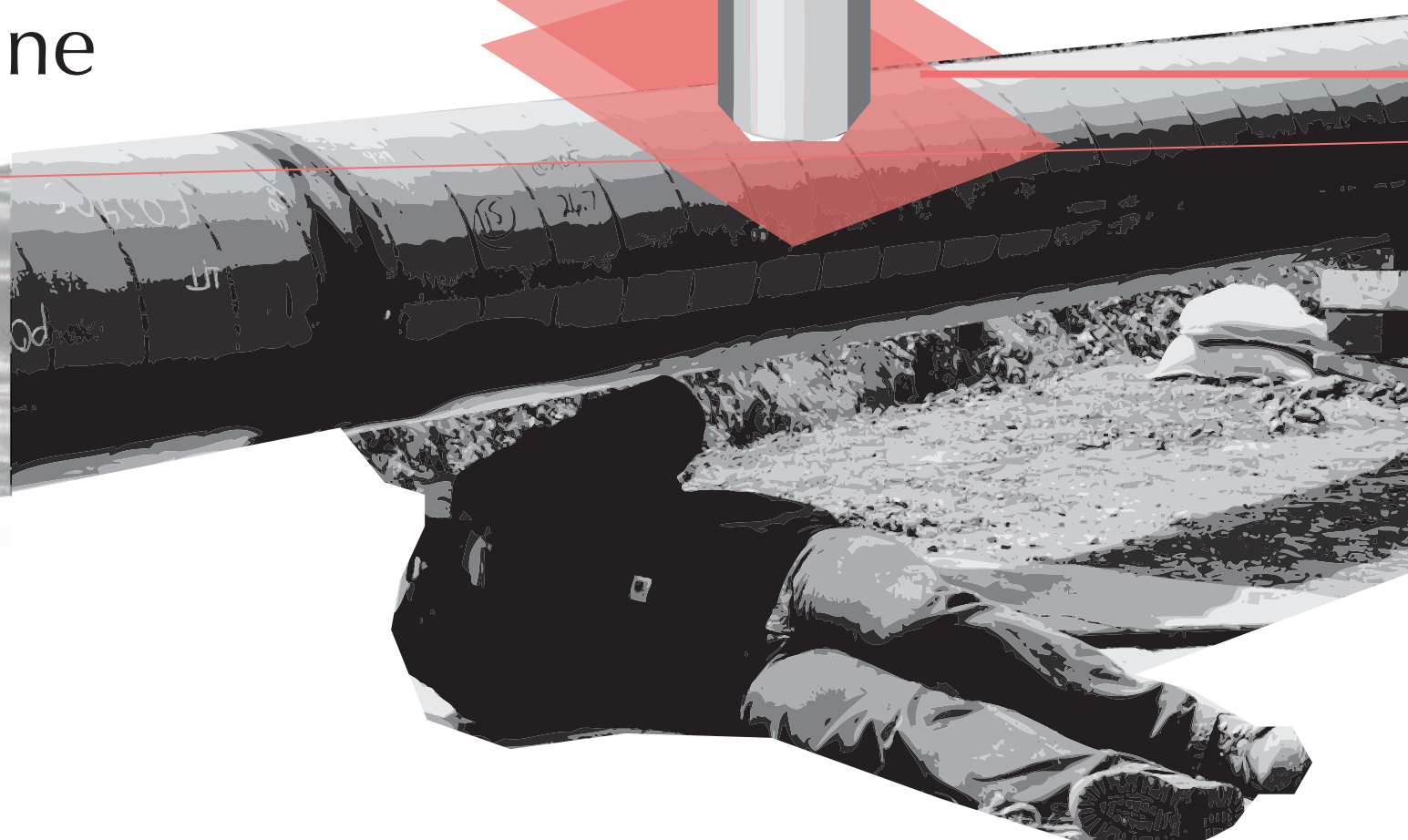
the commercial district: port au prince current sanitation

3 sites with access to water main line



water is extracted from existing line

a



b

screen

this bar screen is used to catch large items such as small twigs, coins, and gravel that may have penetrated the water system

c

disinfectant

tube releases a small amount of disinfectant when water is pumped, this kills all waterborne diseases that can contaminate upon physical contact

d

sand purifier

the sand purifier removes small particles in the water such as dust and silt as water is redirected upward

infrastructure denotes programmatic placement

location of water pipes=
placement of non-potable
program

laundry area



non-potable water
retrieval stations



public showers and sinks

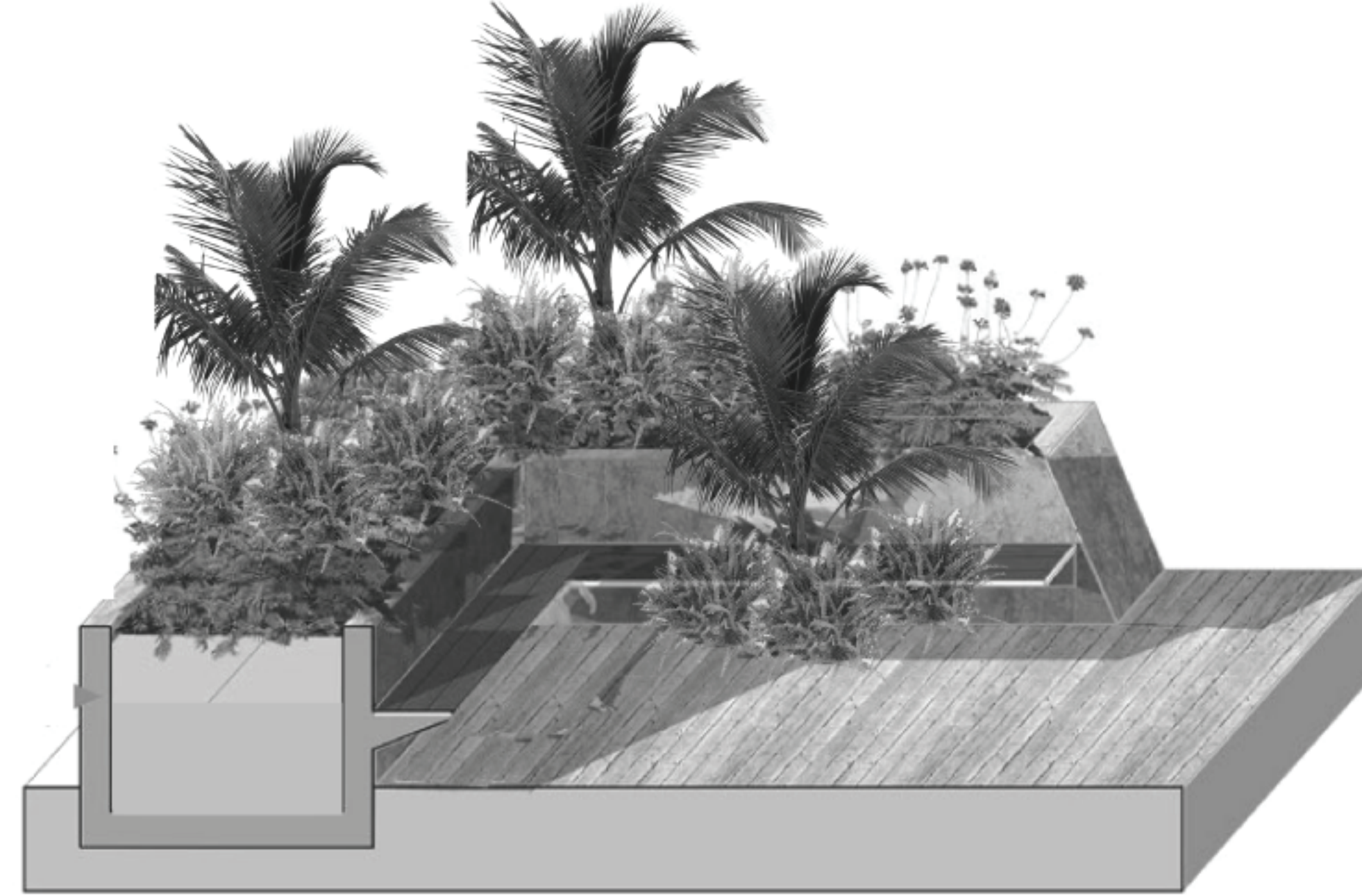


e

purified water is distributed to various programs throughout project

f

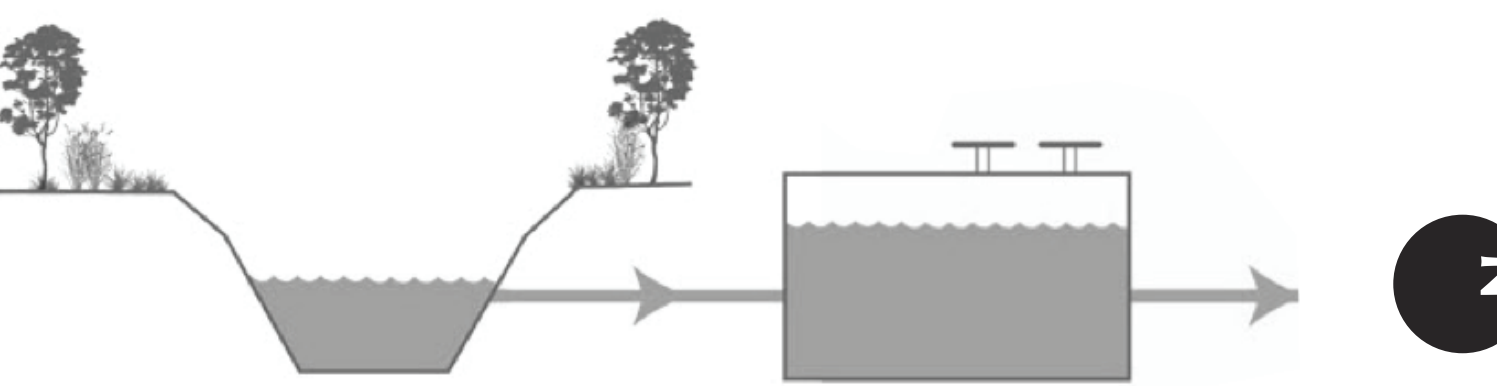
greywater produced



greywater collected is used to water and fertilize plants on site

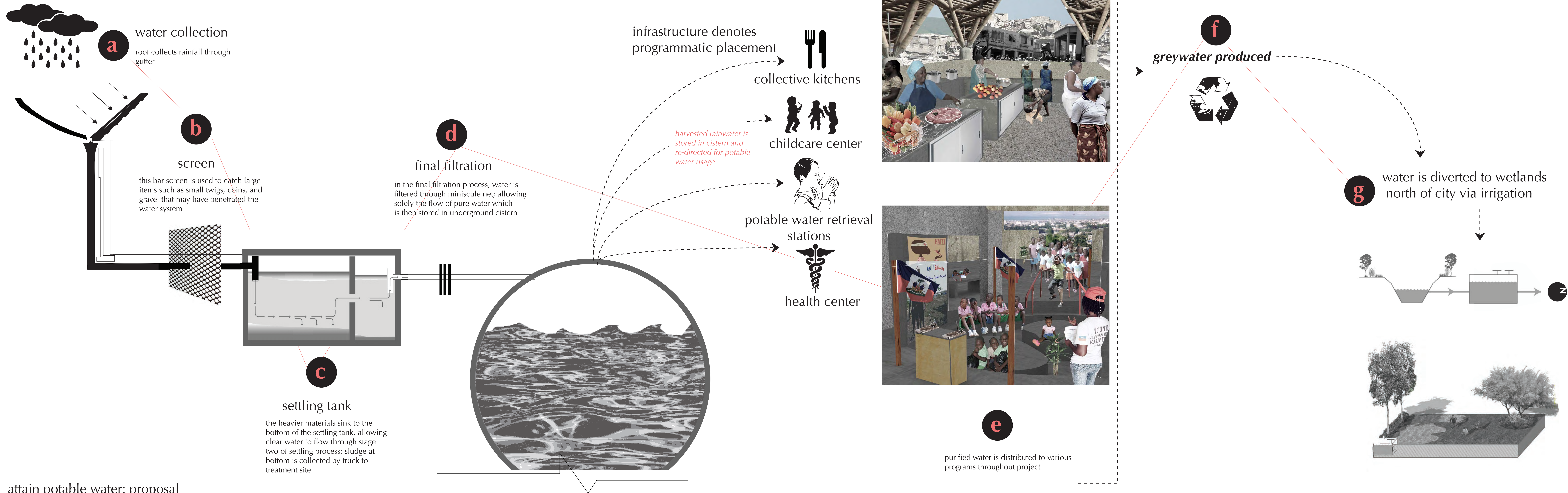
g

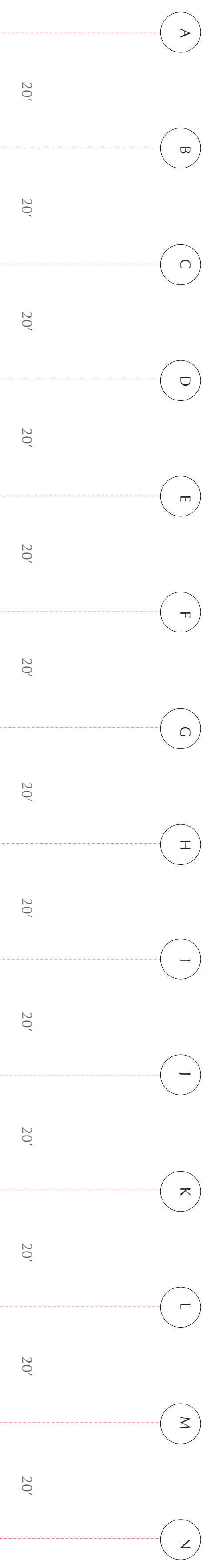
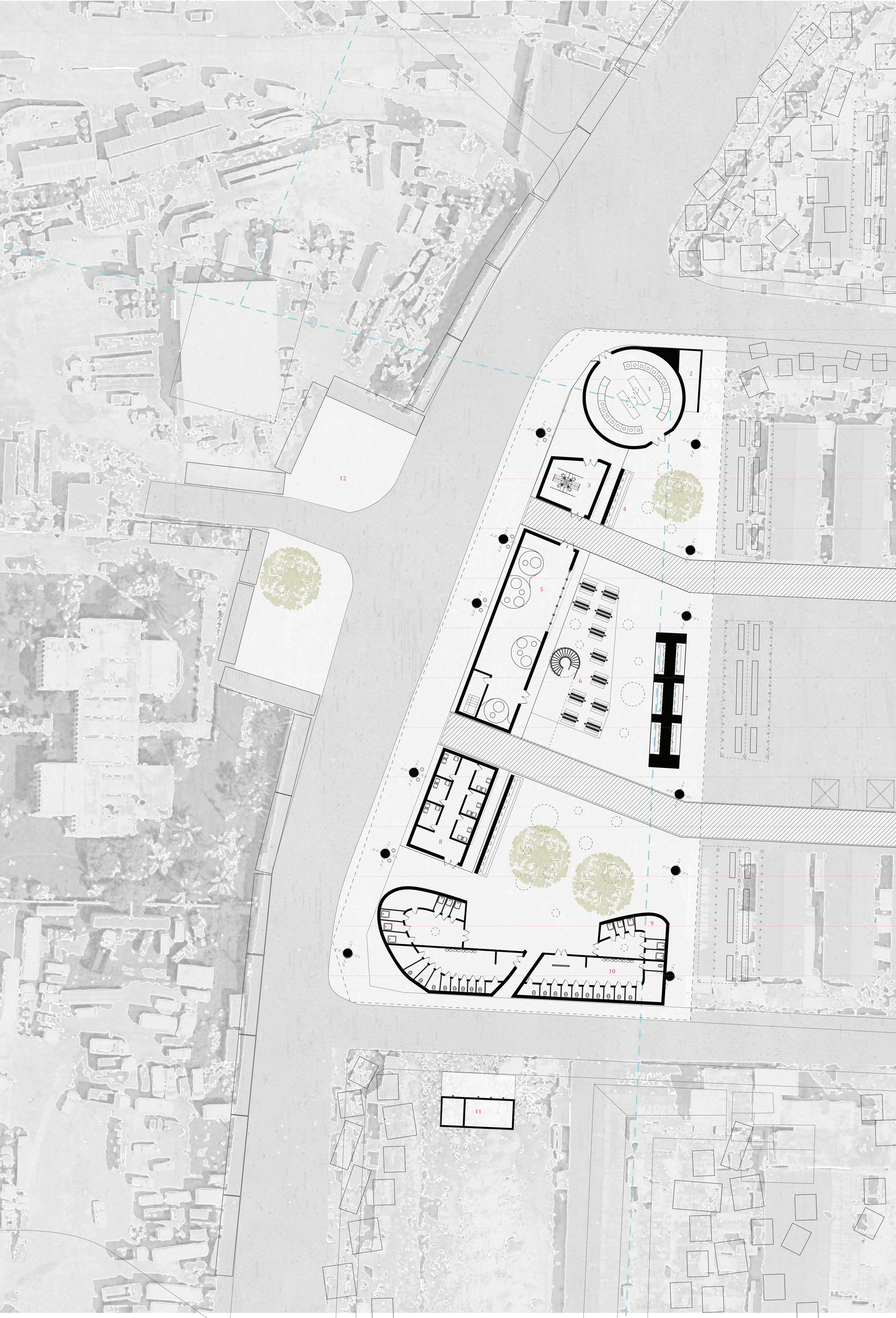
excess water diverted to wetlands north of city via irrigation



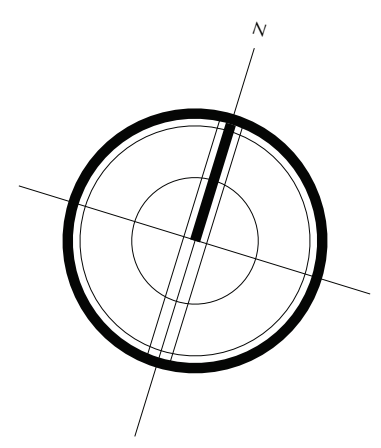
z

attain non-potable water : proposal





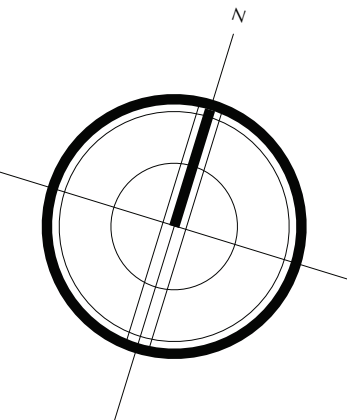
- legend
- 1_ collective kitchen
 - 2_ market security
 - 3_ administrative office
 - 4_ potable water station
 - 5_ childcare center
 - 6_ laundry zone
 - 7_ non-potable water station
 - 8_ healthcare center
 - 9_ showers
 - 10_ bathrooms
 - 11_ compost + trash area
 - 12_ multipurpose space
- level 2
- classrooms
- functioning/accessible water main line
- non-accessible water main line

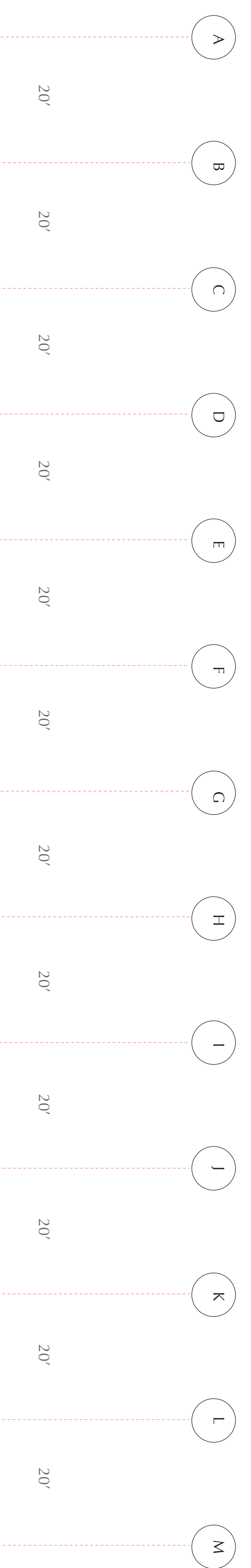
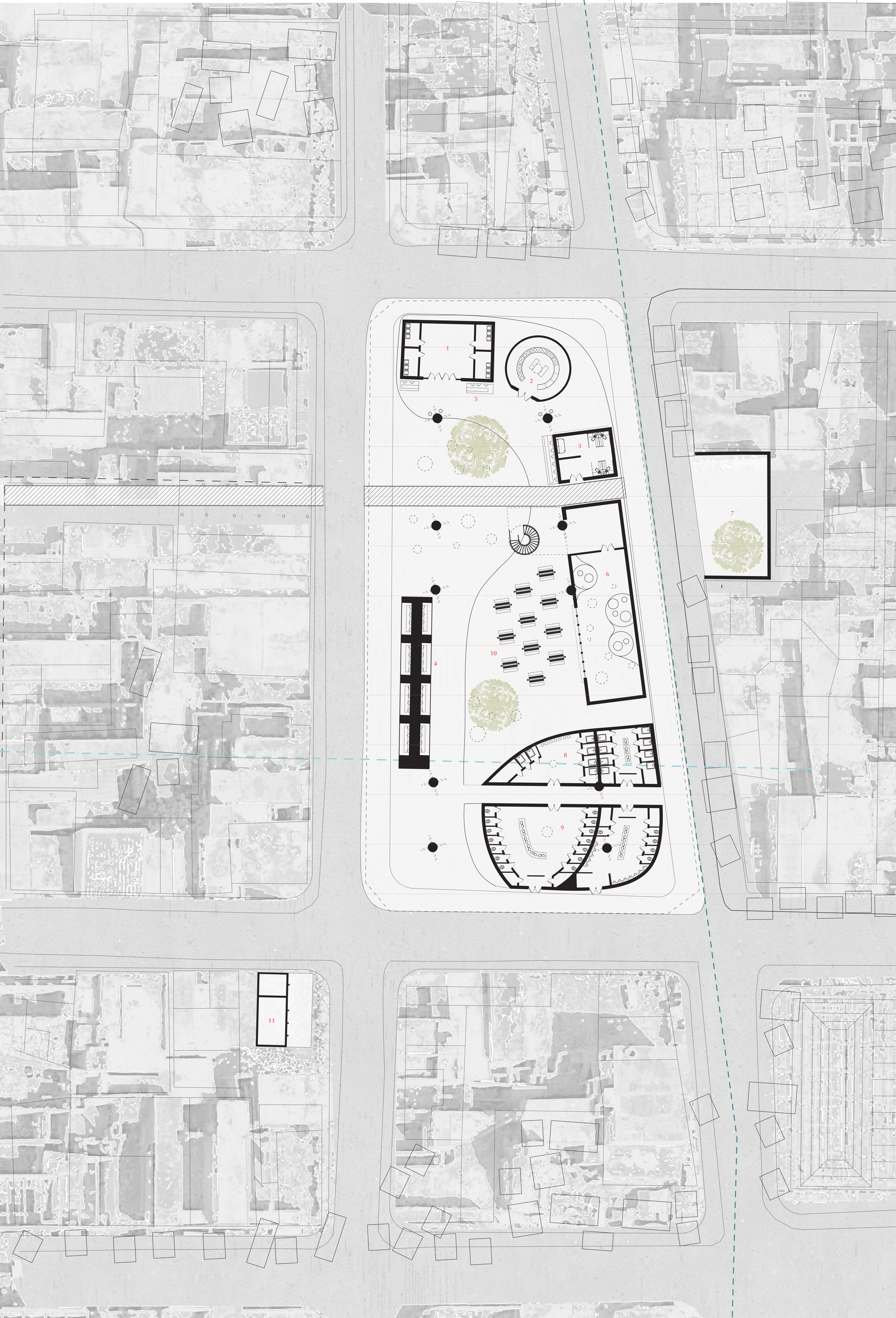


- 1_ compost + trash area
- 2_ non-potable water station
- 3_ potable water station
- 4_ office + healthcare center
- 5_ childcare center
- 6_ laundry zone
- 7_ collective kitchen
- 8_ showers + foot-washing station
- 9_ bathrooms

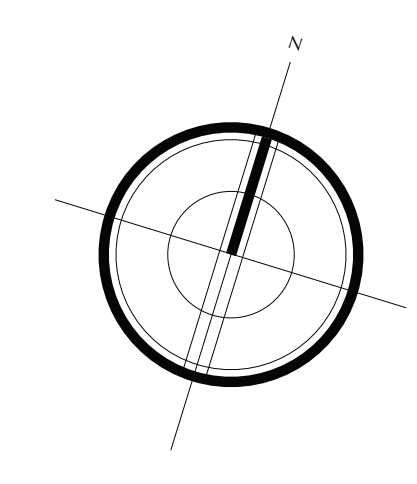
functioning/accessible water main line

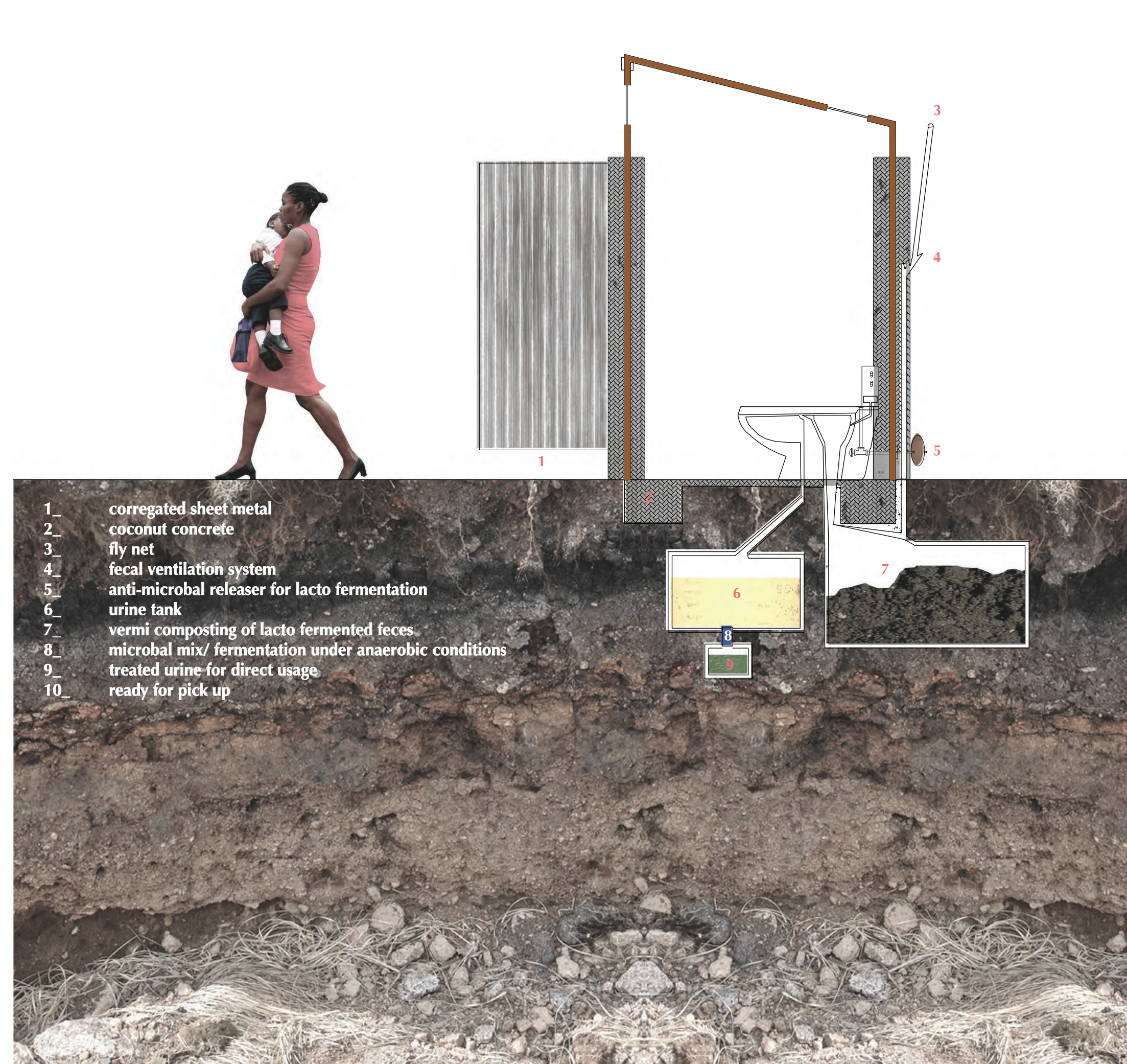
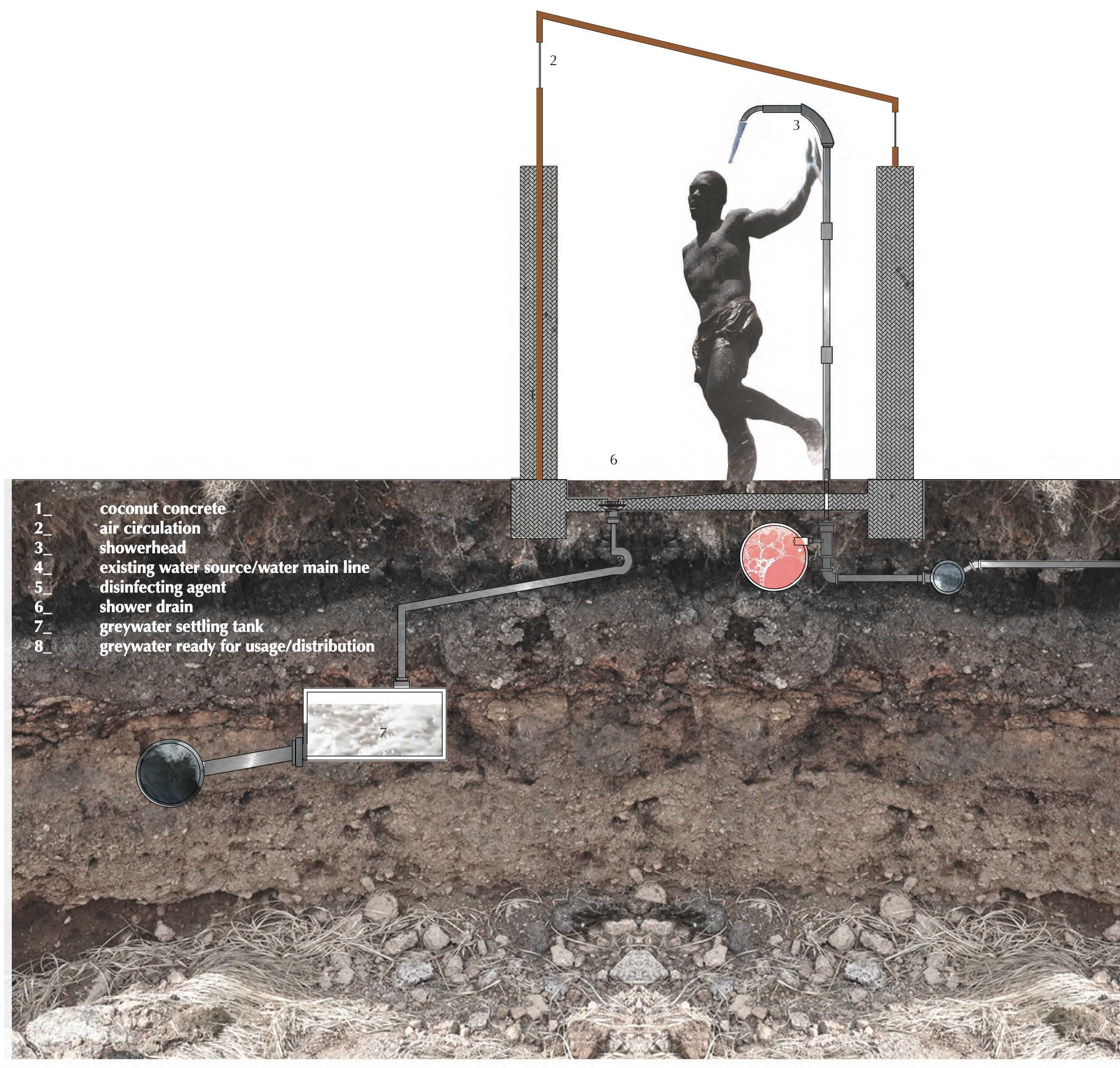
non-accessible water main line





- legend
- 1_ healthcare center
 - 2_ collective kitchen
 - 3_ administrative offices
 - 4_ non-potable water station
 - 5_ potable water station
 - 6_ childcare center
 - 7_ multipurpose space
 - 8_ showers + foot-washing stations
 - 9_ bathrooms
 - 10_ laundry zone
 - 11_ compost + trash area
- level 2
- classrooms
- functioning/accessible water main line
- non-accessible water main line

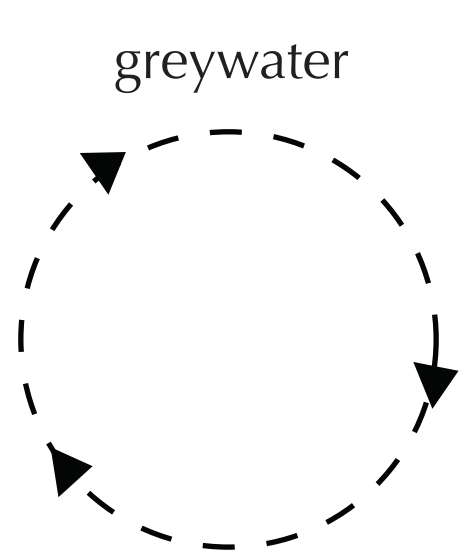




freshwater/ potable filtered/ non-potable water greywater blackwater

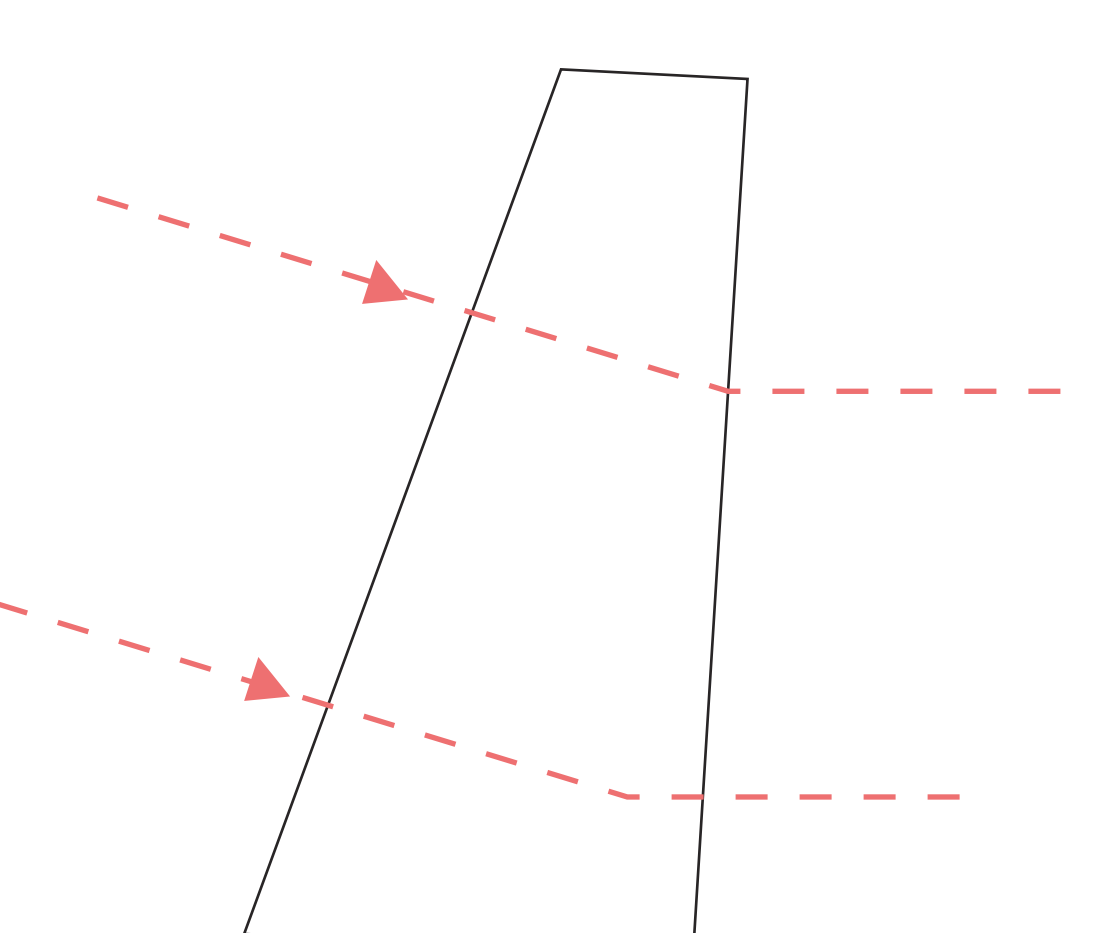
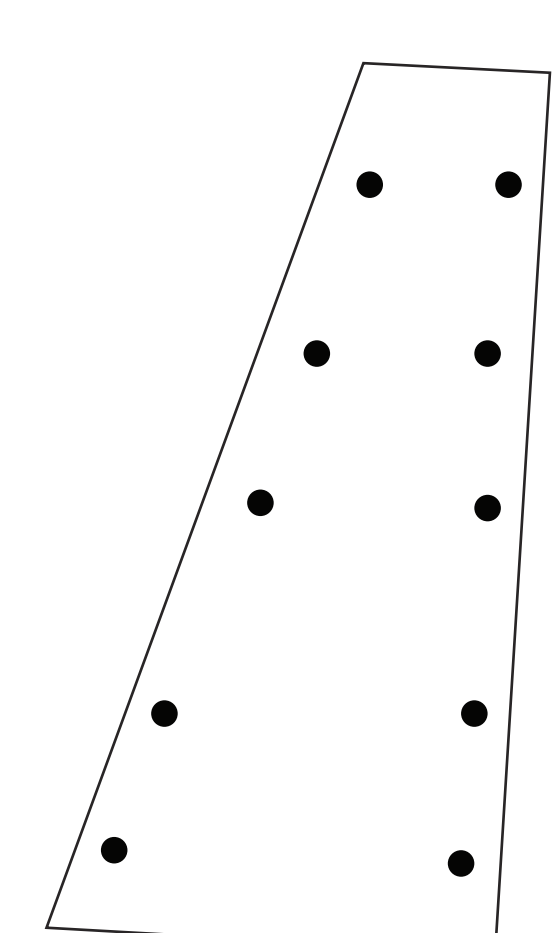
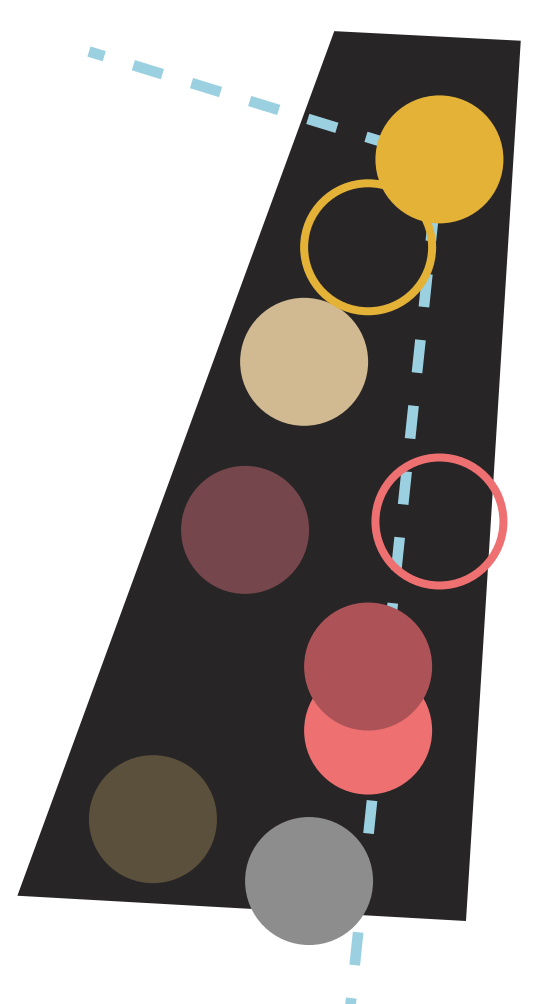
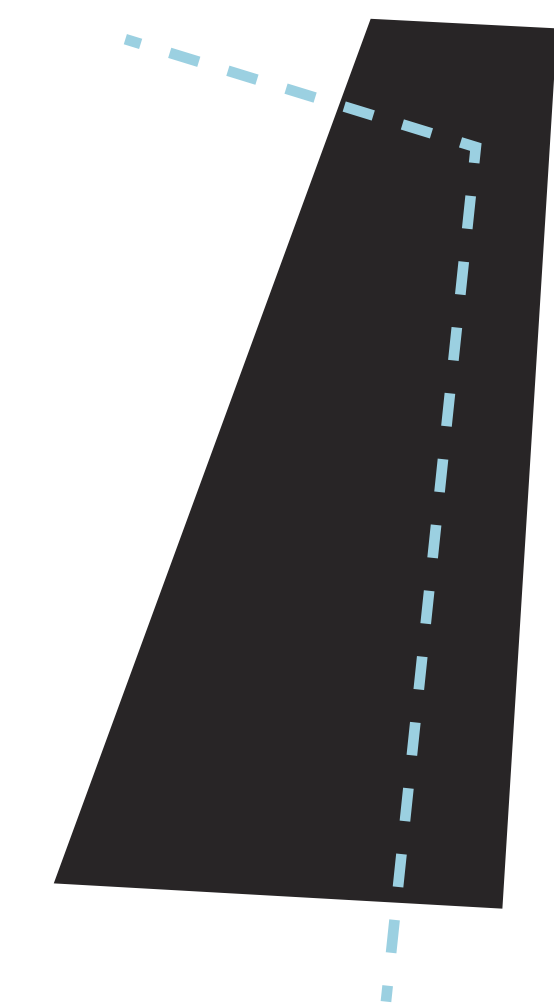
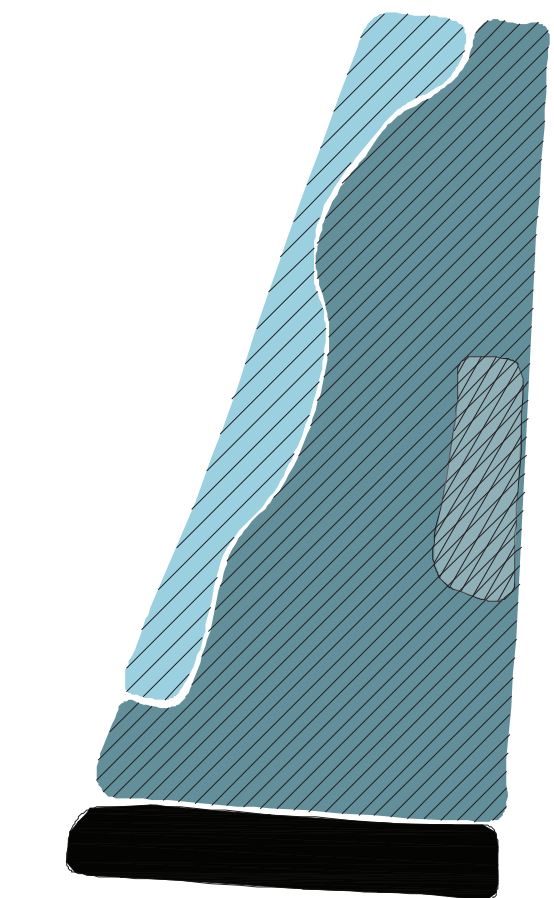
- collective kitchen
- potable water station
- childcare center
- healthcare center

- showers
- hand + foot washing areas
- laundry zone
- non-potable water station



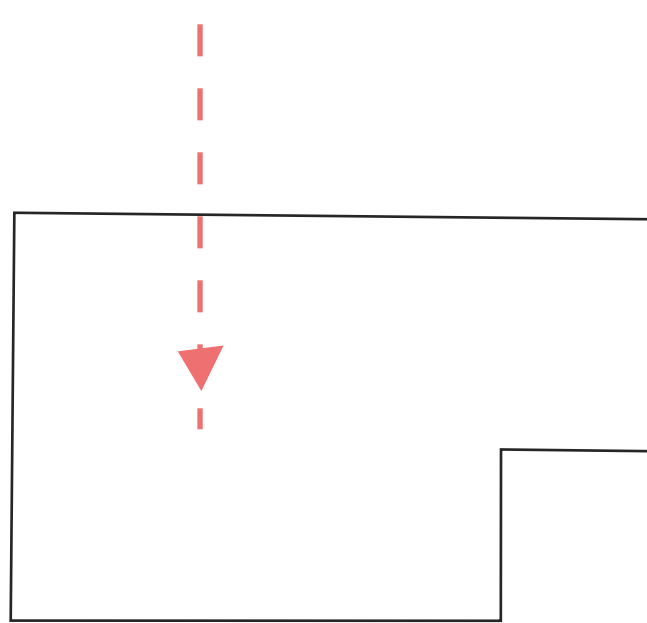
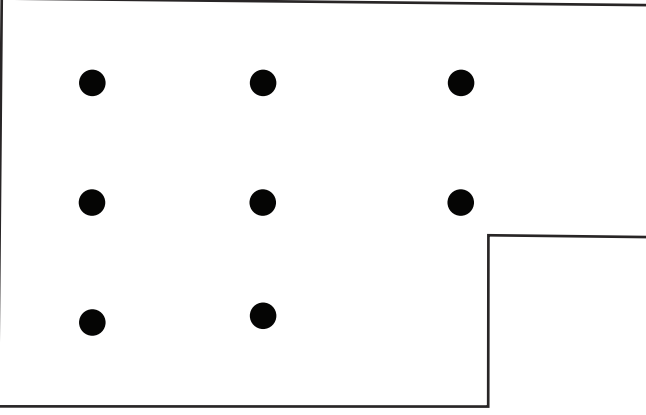
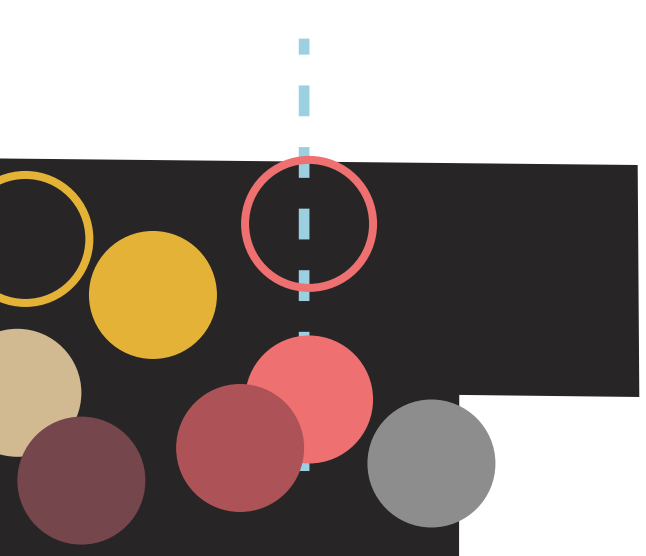
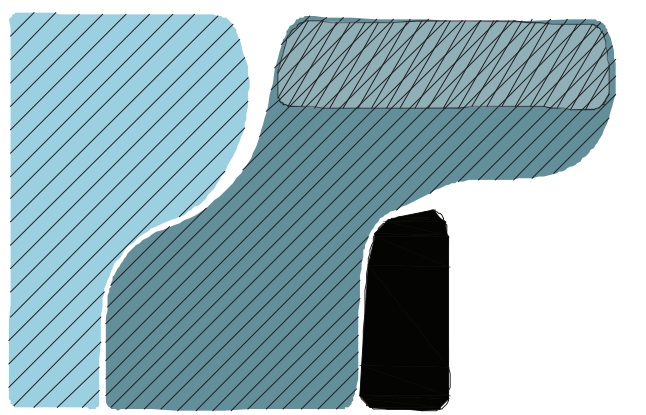
- toilets

site A



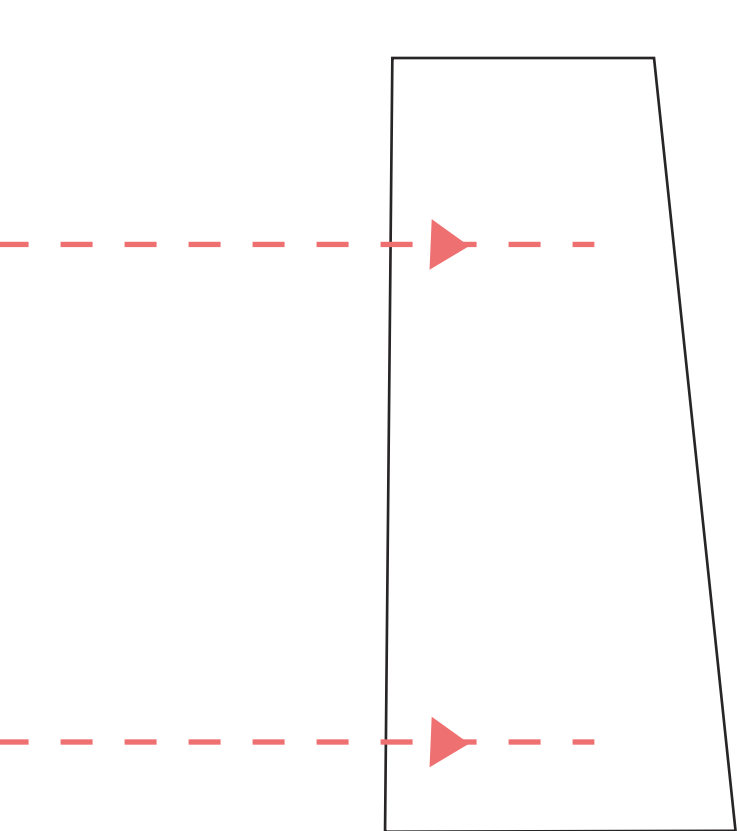
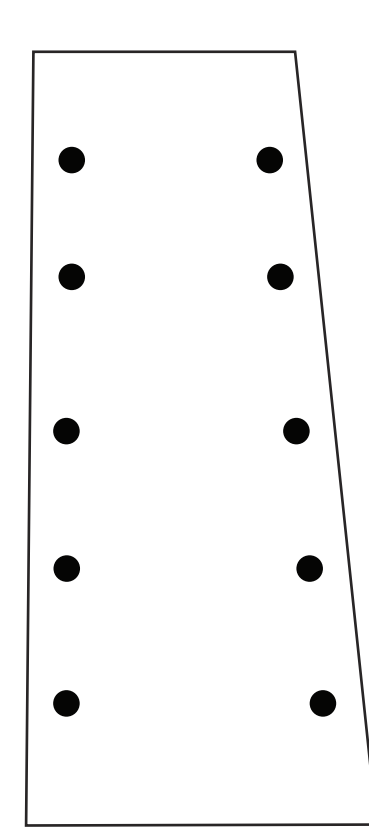
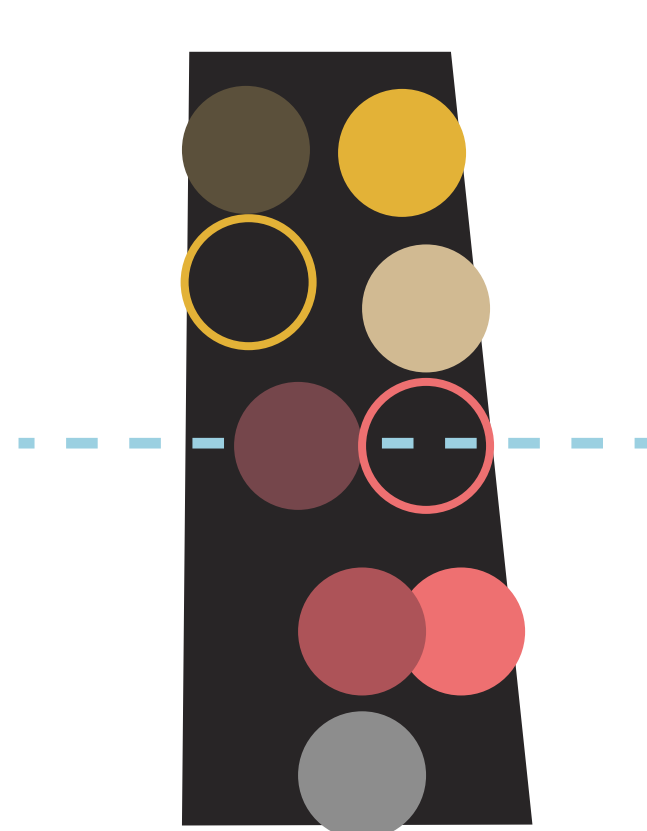
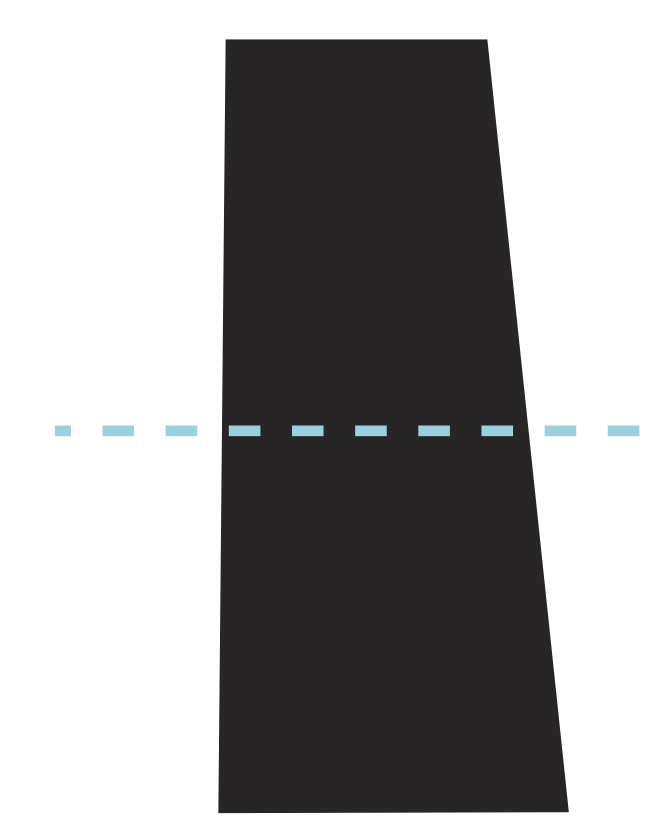
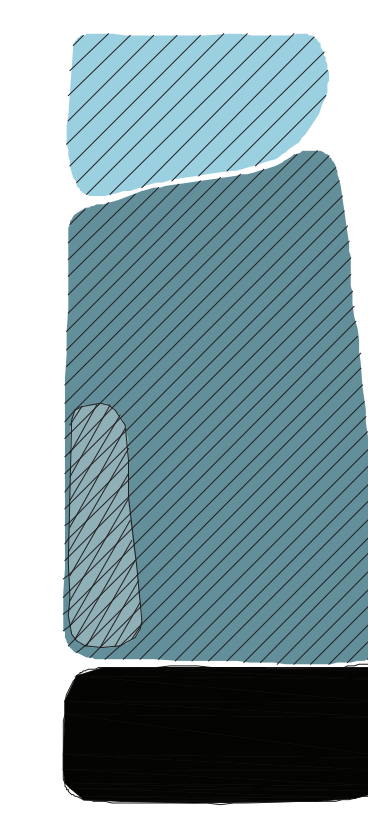
roof coverage: 37,800 sq ft
avg rainfall: 151 in/yr
freshwater cistern size : 43,000 gallons

site B



roof coverage: 31,322 sq ft
avg rainfall: 151 in/yr
freshwater cistern size : 37,000 gallons

site C



roof coverage: 39,140 sq ft
avg rainfall: 151 in/yr
freshwater cistern size : 47,000 gallons

water distribution

existing water main access

water main access vs. program

canopy roof underlying structure

site circulation

site info



below grade plan